RAILROAD GAZETTE

SATURDAY, JUNE 10, 1871.

Contributions.

STEEL-HEADED RAILS.

One of the objections to steel-headed rails is, that it is difficult to obtain a perfect weld between the two metals, and that, when the rail is in use, the head has a tendency to come off. This is especially the case when the head is formed of a flat slab, which gives the minimum of welding surface in the finished rail. The accompanying engravings shows the method adopted at Zwickau, in Saxony, for the manufacture of steel-headed rails for the government roads.

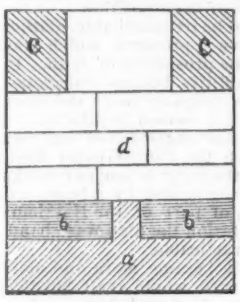


Fig. 1.

Fig. 1 shows the maner of putting up the pile; Fig. 2 is a profile of the finished rail. The pile is 8 inches wide and 10 inches high, and weighs 480 lbs. The finished rail is 6 meters long and weighs 375 lbs. In the diagram *a* is the Bessemer slab which forms the head of the rail; *b*, iron somewhat cold-short; *d*, puddle bars, *c*, iron that has been once reheated. It is claimed that putting cold-short iron next to the steel produces a better weld than ordinary iron. It will be noticed that the Bessemer slab has a rib running along its center. This rib in the subsequent rolling is drawn into the web of the rail, as shown in the cut, thus giving considerable surface of contact. The Bessemer metal used is very soft, and is not far removed from wrought iron—a circumstance favoring a good welding.

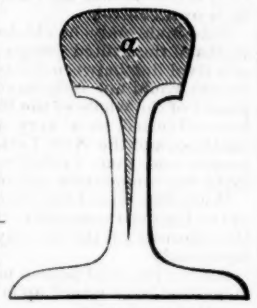


Fig. 2.

In rolling the rail, the pile first passes through the roughing rolls, and is then reheated and finished. The ends of the rails that are cut off are immediately rolled out into flats, and are used to some extent in place of the puddle bars, *d*, in the original rail pile.

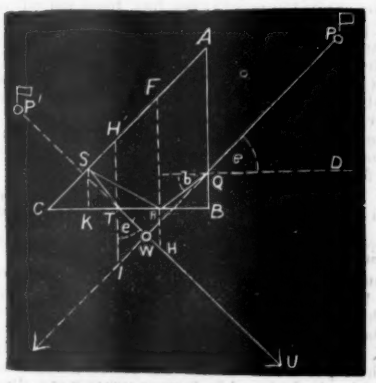
THE ANGLE-PRISM.

TO THE EDITOR OF THE RAILROAD GAZETTE:

The Angle-Prism is coming into considerable use, and is becoming a favorite instrument with railroad engineers for measuring and laying off right angles. We have different kinds of prisms in use, but at this time I only intend to indicate the use of the simplest kind, the trilateral prism. This is of the most general use to engineering surveys.

A rightangled prism with equal katnet planes is framed as the figure shows, its hypothenuse plane being silver plated, and so forming a clear mirror.

As *I W P* is the direction on which to construct the rectangular line *W P'* in the point *W*, hold the prism so over the point *W* that one of its katnet planes, *A B*, receives light from the flag *P*. This light will take the direction *P Q R S T W*, and will show to the eye at *W* the picture of the flag *P* in *P'*. It is a known fact which does not need any further explanation, that a light, entering one of the katnet planes of a right-angled isosceles prism, is twice broken and twice reflected, and forms, after leaving the other katnet plane, a right angle with its original direction. Of course this angle, *U W P*, which the lines, *P W* and *P' W*, make with each other, = 90°. For this reason, looking at the same time in and over the prism, direct another flag so into the line, *W P'*, that this flag and the picture of flag, *P*, in the prism cover each other. Then is *P' W P* = 90°, as sought.



Should the light coming from *P*, strike the prism so as to be reflected on its way only once—by the hypothenuse plane—the angles formed by the direction of the entering and separating rays of light would be greater or less than 90° by twice the angle *e*. It will only be equal to 90° when *e* = *O*, that is, when the light enters at an angle of 90° to the katnet. According to that you will find two pictures of *P* in the prism, but it is easy to tell the one which is to be used, for that one which is produced by only one reflection, and which belongs to the angle 90° ± 2 *E*, will change its position when the prism is turned about its axis; while the other one—which is produced by two reflections—does not move, its position being entirely independent of the angle, *e*. Besides, the latter picture is less clear, on account of the two reflections, and can only be found at the edge of the katnet plane, because its double reflection makes it impossible for its exit to appear at the middle of the plane.

At some future time I will write to you of the adaptation of the trilateral prism to engineering purposes.

E. G. GARTNER.

ST. PAUL, Minn.

Suburban Railroads—Their Construction and Operation.

BY T. M'DONOUGH.

At the time when the various lines of railroad leading from New York into the interior were built, the principal object was to accommodate a mixed traffic of freight and passengers, carried over long distances; and the consolidation of lines stretching far westward, with the profit resulting from it, has made the short traffic of comparatively less importance as a source of income, under the present method of managing it. As the short traffic has gradually increased so as to require special trains, these have been merely duplicates of those used for long travel.

In reviewing the methods proposed, as adapted to the requirements of this short traffic, prominence has lately been given to roads of narrow gauge, on account of their financial success in Wales, and also in some parts of the Continent of Europe. It is claimed that these roads are cheaper to build as well as more economical to operate.

The principal saving in cost of building such roads is made up as follows: In the quantities of land required, and of excavation and embankment; in the use of shorter ties; and also the saving in cost of equipment; as such roads require light engines and cars. The saving in construction may be about as follows: When a road has light cuts and fills of not more than 15,000 cubic yards to the mile, there will be about 1-6 less earth to be moved. But this saving will be rapidly lessened when the cuttings are deeper than 6 feet, the saving being only made in the road-bed, which is only a small part of the excavation in deeper cuttings. In these the slopes furnish most of the material. These require the same amount of earth to be removed for a narrow bed as for a wide one, so that with any work, except that under 6-feet depth of cutting or height of embankment, the saving will be inconsiderable. The ties will be shorter by the difference between a 3-feet and a 4-feet 8½-inch gauge, which is the difference between the width of the two systems, the present one and that under consideration.

The above are the principal items in which any saving can be made, for cheap and light cars can be used on either gauge; but those on the present gauge will give more accommodation to passengers. With these slight advantages, there is the serious drawback, that such roads, if they enter upon those now built, will require a third rail to be laid for their use. This objection will have force upon any lines to be laid near the large cities, though there may be exceptional cases where it does not apply. There being no advantages in the 3-feet gauge sufficient to recommend it in preference to that used at present, the various modes proposed for the accommodation of the short traffic on the present lines will now be considered. That one now adopted to a limited extent, using a car with engine in one end, is adapted to carry about 80 passengers, but is not suited to carry more, and to stop and start, so often as is required; nor can they be reversed at the ends of the route without a turn-table, should it be desired to run the engine always ahead of the passengers. They were not considered suitable for the London Metropolitan line, which is one that seems to have studied the adaptation of the cars suited to its traffic with care, because they did not supply sufficient power to get up speed as rapidly as required with frequent stops.

As nothing suited to the purpose of conducting the short traffic seems to be in use at present, it may be seen what is required, by an examination of the elements of cost of the present trains in detail. A train to carry 100 passengers consists of the engine and tender of 25 tons, a baggage-car and two long cars, amounting in all to 77 tons, including the weigh of 100 passengers, or to 1,550 pounds for each person carried. The long cars have more than 600 lbs. weight for each person carried.

The attendants, with their wages by the day, are an engineer at $3.48, a fireman at $2.25, a conductor at $3.88, a baggage-man at $2.24, and three brakemen at $5, or a total expense by the day of $17.07. Besides this, the cost by the mile run, is as follows: Fuel, $0.079, oil and grease, $0.13, engine repairs, $0.13, car repairs, $0.10, being a total expense by the mile of 33¼ cents. It will be seen by the above that the dead weight hauled per passenger is very great, and this requires an unnecessary outlay for attendance, and also for hauling. If the dead weight per passenger can be reduced, a proportionate saving of labor and fuel and oil can also be made.

With these ends in view, the following plan is now suggested for local traffic of passengers residing not more than 20 miles from the city, a distance about equivalent to one hour's ride in the horse cars up town:

The cars proposed are to be a compromise between the horse and the rail cars. They are to carry the passengers, seated as now in the long cars, on seats for two at the side of the car, with a middle passage and end doors. With seats 2½ feet apart, a car will carry 40 passengers, if made 25 feet long. These cars are to be set on axles with as wide a base as the curvature of the road will permit, with but little overhang at the ends; and should be fastened together by spring couplers so as to have the train move as one mass. In other respects they would be modeled like the horse cars. These weigh about 2 tons, and carry safely more than twice the number they can seat. By allowing a ton additional for the framing and bracing of the proposed car, it would then weigh 3 tons for 40 persons. Assuming now that 200 persons are to be carried, 5 cars and their load will weigh 30 tons. The engine for such a weight may be lighted, and not exceed 10 tons. It should be made to run either end foremost so as to make no delay at the end of the route, by going on a turn-table, but merely switch off, and back to its place at the head of the train in the direction of the next run. Requiring but little fuel and water for its light load, the tank can be put on the engine frame near to the ground. A train made up in this manner will have great stability, the water and passengers being about 2 feet nearer the ground than at present.

The total weight will be 40 tons, with power and adhesion sufficient to stop and start quickly, and it will move steadily, since the cars are bound tightly together, and they also have a low center of gravity. With the same expenses per ton moved as those of the train mentioned above, and assuming that 10 trips can be made in 16 hours, the cost of a 20-mile run will be $1.15 for attendance, and $3.32 for fuel, oil and repairs, or a total of $4.47 per trip, with a capacity to carry 125 passengers through the whole length of the trip. Starting from the city with 200 persons, and leaving part of the load at every station, will give that number as the average through 20 miles. The actual cost of carrying 1 passenger 20 miles will be 3 4-10 cents for train expenses. This is rather less than the rate at which it is stated that cheap passenger trains are now run 10 miles out of London, which is given as 25 cents per week, or 4¼ cents for 20 miles.

Should a part of this saving over present rates be attained, the accessibility, and also with this the value of city suburbs, would be so much increased, to the mutual interest of land-owners and railroads, that even suggestions of what may be done will not be out of place, as calling attention to the subject.—*Van Nostrand's Engineering Magazine.*

The Slide-Valve.—II.

BY C. DRAPER, A. B., L. C. E.

(Continued from page 84.)

In order that we may clearly understand the purposes of lap, inside lap and lead, we shall first consider the manner in which a slide-valve, which has none of these, distributes the steam during one stroke of the piston. Such a valve is shown in Fig. 12, where it will be seen

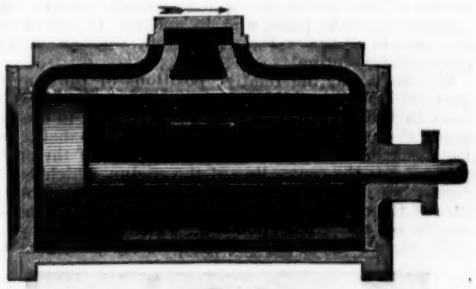


Fig. 12.

that the admission and exhaust edges of the valve faces are coincident with those of the steam ports. The valve is supposed to be moving in the direction of the arrow, and, therefore, is just opening the upper port to steam. The piston, since there is no lead, is shown to be just commencing the down stroke; also, as there is no lap, the lower port must be just opening to the exhaust.

A valve of this nature, therefore, admits steam throughout the whole stroke, simultaneously closing one port to the exhaust and opening it to steam, and opening the other to the exhaust and closing it to steam. The evils of this method of distribution will be best seen as we proceed with the explanation of their remedies—viz., lap, inside lap and lead. Lead is given to the valve for the following reasons: The piston having a reciprocating motion, and traveling at, sometimes, very great speed, must acquire this speed and be stopped within the short distance of the length of the stroke; had the valve no lead this must be done by the crank, to the great detriment of the machinery; but the lead enables the piston, at the end of its stroke, to come in contact with steam, tending to force it in the opposite direction; it is thus brought gradually to a stop, which diminishes the violent jerk that would otherwise be caused by the sudden change in the direction of its motion. The lead is also advantageous in caus-

ing the steam to acquire its full pressure and be ready to begin the next stroke as soon as the crank shall have passed the center. It will also be seen that as the piston lingers in its motion at the end of one stroke and the beginning of the next, the most time is afforded for this operation with the least motion of the piston and the least retarding effect.

The necessity of the lead is well illustrated in the modern locomotive, traveling at, say, fifty miles an hour. Let us suppose that the stroke of the piston and diameter of the driving-wheel are 20 inches and 5 feet 6 inches respectively, then the average velocity of the piston will be 848 feet per minute, and the direction of its motion will be changed over eight times in each second. Besides this principal effect of the lead, viz., that admitting steam so as to produce a counter pressure on the piston before the end of the stroke to act as a cushion in arresting the motion of the piston, we shall see, as we proceed, that the lead affects the period of every event in the distribution of the steam. Thus we shall see that it helps the lap in hastening the cutting off and exhausting of the steam on one side of the piston before the end of the stroke, and in closing the opposite port to the exhaust on the other side. It should be here observed that the distribution of the steam by a slide-valve during one revolution may conveniently be divided into four principal events. Thus, fixing our attention to one side of the piston, we have, first, the period of *admission* of the steam, which may be divided into two portions—one, before the stroke commences, caused by the lead; and the other, or admission proper, after the stroke has commenced. The second, or period of *expansion*, is that in which the steam is shut up and isolated within the cylinder; the third, the period of *exhaustion*, during which the steam is escaping to the condenser or atmosphere; and the fourth, or that of *compression*, is when the port is closed to the exhaust, for during this period the piston has to overcome the back pressure of any vapor which may remain in the cylinder.

The purpose of lap is to cut off the steam before the end of the stroke, for, as we have seen, the valve, after closing the port, has to move on for exactly the length of the lap (provided there is neither inside lap nor clearance) before the port is opened to the exhaust; during this time, the steam, locked up in the cylinder, acts upon the piston by its expansive force alone, thus economizing steam and bringing the piston gradually to the end of its stroke. At the instant one port is opened to the exhaust the other is closed to the exhaust and any steam remaining on that side of the piston will serve to aid that admitted by the lead in *cushioning* the piston at the end of the stroke. This early exhaust of the steam, caused by the lap and lead, is advantageous in freeing the piston from back pressure, for, before it commences a stroke, the cylinder is almost completely cleared of waste steam.

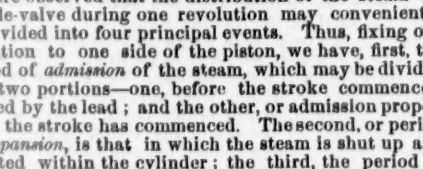
If a valve have inside lap its effect will be to delay the early exhaust, and hasten the compression, thus lengthening the periods of expansion and compression.

A small amount of inside lap, about 1-16th inch, is often added for the purpose of preventing the escape of steam between the exhaust edges of the valve and ports when the valve is at half stroke.

The effect of clearance in the valve is to hasten the exhaust and delay the compression, thus shortening the periods of expansion and compression; its effect is, therefore, the reverse of that of inside lap

Having now given brief descriptions of the form and effects of the common slide-valve, we shall proceed to the consideration of the following questions, viz.: To find the relative positions of the crank and piston at any point of the stroke; to find the relative positions of the valve and eccentric at any part of the travel of the valve; and, lastly, to find the relative positions of the piston and valve, so as to find at what points of the stroke admission, cut-off, release, and compression take place, and, in general, to follow the movements of the valve and piston throughout one complete revolution.

In considering the relative positions of the moving parts of machinery, it is only necessary to lay down to scale in a diagram their center lines. Thus, in the diagram, Fig. 13, C is the center of the crank-shaft, and the circle described around it is the orbit of the crank pin; $C\,E$ is the center line of the engine, which is the center line of the cylinder produced. Let $C\,D$, the center line of the crank, lie in the line $C\,E$; then, if $D\,E$ be the length of the connecting-rod, which in this case is twice the stroke, E will be the position of the center



of the cross-head pin of the connecting-rod. As it is evident that both ends of the piston-rod move in the same straight line, if we determine the motion of the cross-head we shall at the same time know the motion of the piston, so that it will be unnecessary to lay down the center lines of the piston-rod and piston.

From Fig. 13 it is manifest that the crank is at its dead points when the piston is at the top and bottom of its stroke; to obtain the position of the crank at any other part of the stroke for a given position of the piston, we proceed as follows: Let A be the given position of the piston, or, rather, of the piston-end of the connecting-rod; from A, as center, describe an arc of a circle having as radius the length of the connecting-rod, $D\,E$, cutting the crank orbit in the points, G and H, then $C\,G$ and $C\,H$ are the two positions of the crank corresponding to the position, A, of the piston when traveling in opposite directions. If we require the position of the piston corresponding to a given position of the crank, we have simply to reverse the process; that is, we must draw an arc having as center the given position of the crank-pin, and as radius the length of the connecting-rod as before, then its point of intersection with the center line, $C\,E$, will be the point required. In this figure, E is the end of the piston rod at one end of the stroke, therefore $A\,E$ represents the portion of the stroke traversed while the crank moves from D to G, the remainder of the stroke, $A\,L$, being completed while the crank travels from G to K. By finding the position of the crank when the piston is at half stroke, it will be seen that the crank will not be at right angles to the center line, $C\,E$, but will be nearly so when the connecting-rod is very long compared with the throw of the crank. This is, of course, due to the angle formed by the connecting-rod with the center line, $C\,E$, or to the "angularity of the connecting-rod," as it is usually called. In the same manner it will be seen that while the piston is traveling from E to L it is in advance of the position it would occupy were there no angularity, and that while traveling in the opposite direction, that is, from L to E, it is behind it. Thus, referring to Fig. 13, if we draw $G\,g$ perpendicular to $C\,E$, $g\,D$ would be the distance traveled by the piston while the crank moved from D to G, provided there were no angularity, or, what is the same thing, if the length of the connecting-rod were infinite; $g\,n$, therefore, is the effect due to the angularity of the connecting-rod for this position, and it clearly becomes a maximum at half stroke. When the crank pin occupies the position H, the piston-rod end will have the same position, A, as before; but now the piston is traveling in the direction $L\,E$, therefore, $n\,g$ will be the distance of the piston *behind* the position it would occupy if there were no angularity. These effects will, perhaps, be more clearly understood when we have shown how to calculate the distance traveled by the piston for any position of the crank; this we now proceed to do.

In Fig. 13, let $C\,G = r$ be the throw of the crank, $G\,A = c$, the length of the connecting-rod, and let x be the required distance, $E\,A$, for any position, $G\,C$, of the crank, making an angle a with the center line, $C\,E$, then

$$E\,A = E\,C - A\,C \quad (1)$$
$$\text{but } E\,C = r + c$$
$$\text{and } A\,C = A\,g + g\,C \quad (2)$$
$$\text{where } A\,g = \sqrt{A\,G^2 - G\,g^2}$$
$$= \sqrt{c^2 - r^2 \sin.^2 a}$$
$$\text{and } g\,D = r \cos.\, a.$$

Substituting these values for $A\,g$ and $g\,C$ in (2), and the resulting value for $A\,C$ in (1), we have $E\,A = x = r + c - \sqrt{c^2 - r^2 \sin.^2 a} - r \cos.\, a$. Or if $n : 1$ be the ratio of the lengths of the connecting-rod and crank, we have $c = n\,r$, and substituting this value for c in the last equation, and reducing, we have $x = r\,(1 + n - \cos.\, a - \sqrt{n^2 - \sin.^2 a}$. From this equation we see that, since the whole expression within the brackets is multiplied by r, for a given value of n, x, is proportional to r; or, in other words, if we calculate x for given values of n and a, taking $r = 1$, this x, multiplied by the throw of the crank, will give the distance traveled by the piston when the crank makes the given angle, a, with the center line of the engine. For example, let us take the case of an engine whose stroke is 2 feet, and connecting-rod 4 feet long, then $n = 4$, and let us find x when the crank is at right angles with the center line of the engine; then $a = 90°$, and sin. $a = 1$, cos. $a = 0$, hence $x = 1 + 4 - \sqrt{4^2 - 1} = 1.128$; or, when the stroke is 2 feet, $x = 1.128 \times 12 = 13.536$ inches, since $r = 12$ inches. This may be easily verified by a diagram drawn to scale. As another example, let it be required to find x for 45°. Fig. 13, which shows a crank of 12 inches, and a connecting-rod of 4 feet, drawn to a scale of $\frac{3}{8}$ inch to 1 foot, shows this position of the crank, and gives $A\,E$ or x to be $4\frac{1}{4}$ inches. If x be calculated in this case we have

$$x = 12\,(1 - \tfrac{1}{2}\sqrt{2} + 4 - \sqrt{4^2 - \tfrac{1}{2}}).$$
$$\text{since sin. } 45° = \cos. 45° = \tfrac{1}{2}\sqrt{2},$$
$$\text{therefore, } x = 12 \times .356 = 4.272 \text{ inches.}$$

In our next paper we shall consider the relative positions of the piston and valve at different portions of the stroke.—*English Mechanic.*

Reasons for the Lease of the New Jersey Companies' Roads.

The committee appointed by the Directors of the United Companies of New Jersey to submit the lease of their lines to the stockholders for ratification, have drawn up the following statement, which seems very clear and straightforward, of the reasons influencing them in proposing and recommending the lease:

In order that the mutual business between the works of the United Companies and those of the Pennsylvania Railroad Company should be conducted harmoniously, an agreement was entered into some years since, in which, among other things, it was provided that the connecting railroad should be built; that the United Companies should pro rate on freight and passengers, and that certain reasonable terminal facilities should be provided. Experience, however, soon made it evident that many points had received no consideration, while others were provided for in an indefinite manner; hence it became necessary to add supplementary provisions explanatory of the contract. Other points of difference arose, however, from time to time, and complaints were continually being made by both parties, each putting a different construction on their rights and obligations. While, in some sense, there was a mutuality of interest, yet, in the actual workings of the roads, the interests of the companies came into absolute direct conflict. There were too many points of contact and attrition for the arrangement to work smoothly, and the position became simply that of an armed truce

From the great expansions of the system of roads in the South and West, owned or controlled by the Pennsylvania Railroad Company, embracing, it is believed, an aggregate length of over seven thousand miles, a necessity for enlarged terminal facilities at some point on the New York waters became urgent. This being extraordinary, and not contemplated in the contract, added much to the complications already existing.

Some years since, however, the United Companies, foreseeing that this necessity might arise, purchased the property in Jersey City known as the Harsimus Cove. It was believed that, when the necessity arose, the Pennsylvania Railroad Company would aid in the construction of the wharves and other necessary works. This, however, they declined to do. The outlay would be several millions of dollars, and they naturally objected to invest so large an amount on property to which they had no title; and the United Companies were likewise averse to making the total expenditure for a terminus of a system of roads of over seven thousand miles, their proportion of which was only one hundred, and they were equally unwilling to convey the title to the Pennsylvania Railroad Company, and thus abandon one of the keys of their position.

The differences appeared to be irreconcilable, neither party being willing to improve a property which was admitted to be essential to the prosperity of both. In the meantime the want of facilities became embarrassing, and the relations of the company more and more unfriendly; a permanent breach seemed inevitable.

As a last resort the idea was suggested of entering into an arrangement by which the Pennsylvania Railroad Company should have the right to use our works for their own business, accompanied by a lease, extended for a length of time, of part of the Harsimus property. After full consideration the plan was abandoned by both parties, as impracticable.

A crisis had arrived, and it became more and more evident that no temporary truce would avail, but that some arrangement must be made, founded on an absolute community of interest. The rapidly extending system of roads controlled by the Pennsylvania Railroad Company, extending from the Pacific, required an independent outlet to the seaboard; in fact, it is vital to their interests that the terminal points should be under their own control.

This could only be obtained either by a lease of the works of the United Companies, or by the construction of a rival line between the two great cities. The latter course would not only have deprived the United Companies of the whole of the Western business, but would have diverted, to a very great extent, the Southern business, and the New York and Philadelphia business proper, and that, probably, at rates so reduced as to make the competition ruinous.

While this would have been disastrous to the interests of the United Companies, it would also have affected the interests of the Pennsylvania Railroad Company injuriously.

After a long and patient negotiation, the lease, as now submitted, was agreed upon by the directors of the respective companies.

Its main provisions are, that the stockholders of the United Companies shall receive a clear net rental of ten per cent. per annum for the use of their works; the Pennsylvania Railroad Company assuming all their debts and obligations of every kind. It is well known that the amount of rental was greatly objected to by the Pennsylvania Railroad Board. As the United Companies had netted, for the last year, but about seven per cent. of their stock, it was strongly urged that the rate of ten per cent. was too great Your Board was, however, firm, and finally the rate was acquiesced in.

As regards the probabilities of the net revenues exceeding ten per cent. under the present management, the following facts as to the past earnings of the United Companies will, perhaps, not be out of place:

In the earlier days of the old Joint Companies, viz., the Delaware & Raritan Canal, and the Camden & Amboy Railroad Companies, very large dividends were made, one of the principal causes being the small proportion the stock bore to the bonds. For many years the stock of the Joint Companies was but three millions of dollars, while the debt was eight millions. When earnings were made amounting to eight per cent. on the total investment of eleven millions, the result was as follows:

Eight per cent. earnings on $11,000,000 of investment	$880,000
Deduct interest on $8,000,000, at six per cent.	480,000
Leaving applicable for dividend or thirteen and one-third per cent.	$400.000

This great disproportion of stock to the debt, in prosperous times resulted in large dividends, yet the basis was considered by the directors as dangerous and unsafe, and the larger part of the funds required, of late years, for capital expenditures, has been raised by the sale, at par, of new stock to the stockholders. On the 1st of January the stock held by individual stockholders in the United Companies, and the Philadelphia & Trenton Railroad Company, was, in round numbers, nineteen and a half million dollars, while the debt was somewhat over fifteen millions.

Taking the rate of earnings on this total investment to be eight per cent., the same as above, then the result would be as follows:

Eight per cent. earnings on $34,500,000	$2,760,000
Deduct interest on $15,000,00 : at 6 per cent.	900,000
Leaving applicable for dividend or about nine and a half per cent only.	$1,860,000

It will thus be seen that with the same rate of earnings on total investment, from the changed proportion of stock to debt, formerly thirteen and a third per cent. could be applicable for dividend, while with the same rate of earning now on the total investment, only nine and a half per cent. would be earned, and that the large dividends declared in former years were due, in a great degree, to the small proportion of stock to the total investment.

The rate of eight per cent. has been taken, it being believed to be about the amount earned on the total investment for any number of consecutive years. Some years it may have exceeded that rate, but in others it has fallen below that point.

For the last year, however, the earnings on the total investment dropped to about six and two-thirds per cent.

Many causes have tended to produce this diminution of earnings, some of which, being exceptional, may be expected to cease; others, however, must continue to operate for some time. Among the former may be mentioned the partial failure of the peach crop in certain years, paralysis of the coal trade from strikes, etc.

But it may be remarked that while those special causes of loss may not exist in the future, yet experience reaches us that other new exceptional cases will probably occur which cannot now be anticipated.

Among the causes tending to reduce the net earnings below those of former days, the increase in the price of labor and materials is prominent. The net earnings on most railroads would formerly average about fifty per cent. of the gross receipts, now seldom more than thirty.

Again, a large increase of expenditure is made necessary without any corresponding increase of earnings. The public demand more costly structures. Real estate has to be purchased in advance of the immediate requirements, which, while absolutely necessary in the future, must be a burden, not bringing with it an immediate increase of earnings.

It is true that, on the other hand, the business, and consequently the earnings, must be expected to increase; but it must be remembered that with increased earnings increased expenditures become necessary, to provide facilities to do the business, and with that more additions to the debt or stock. In other words, while more money is earned, the capital expenditure has to be increased in about the same proportion. The capital expenditure for this year is estimated to exceed one million of dollars.

Many of our directors have thought it would be expedient to merge our several companies into one, and by reducing the number of directors and officers that a greater degree of simplicity in the management could be obtained.

While this would probably be the result to a small extent, yet it is extremely doubtful whether changes could be made so radical in their nature as to introduce that absolute concentration of management so essential and necessary to the prosperity of any company. The very constitution of the companies will prevent an absolute unity of sentiment and opinion.

It would, therefore, appear that leaving out of consideration the loss of business consequent on the building of a rival road, yet that the actual secured interest of ten per cent. is equal to, if not greater than could have been earned in the more prosperous days of the companies, had the same proportions of stock and debt existed, and very much greater than it has been lately; and that it would be unwise to estimate that, even with the sources of our business untouched; the amount of earnings on the total investment in the future will exceed those of the past; it may, indeed, be well doubted whether they would ever be again equaled. The construction of the rival road referred to above should, however, be taken into consideration. In fact the question resolves itself into a question of a lease or rival road; the last resulting in a divided business and at reduced rates, must insure small dividends, and the conversion of the roads of the companies from main thoroughfares to simply local roads.

The proposed lease, now submitted for ratification, has been drawn with the utmost care. Provisions have been inserted to guard the interests of the individual stockholders in every probable contingency. It insures the stockholders a fixed, sure income, instead of a fluctuating one, greater in amount than has been earned for years. There can be no doubt that the stock, becoming, in fact, bonds of the Pennsylvania Railroad Company, secured by the present works of the United Companies, together with the additions that will necessarily have to be made, will take a high rank in the market as a first-class investment, and will be valued accordingly.

The lease received the utmost care and scrutiny from your Board, and is recommended for your acceptance by a vote of sixteen members of the Board in favor, to nine against.

Samuel Welsh, A. L. Dennis, R. F. Stockton, John G. Stevens, Cambridge Livingston, Committee.

Mobile & Ohio Railroad Report.

The Mobile & Ohio Railroad extends from Mobile, Ala., northward to Columbus, Ky., 472 miles. It has a branch from Narkeeta, 163 miles north of Mobile, northeastward to Gainesville, Ala., 21 miles; a branch from Artesia, 219 miles north of Mobile, northeastward to Columbus, Miss., 14½ miles; and a third branch from Muldon, 240 miles north of Mobile, northeast to Aberdeen, Miss., 10 miles. The total mileage is thus 517½ miles. From the annual report for the year 1870 we extract the following:

DIRECTORS' REPORT.

The directors meet you with the following report:

The receipts for the year 1870 were	$2,559,340 92
Expenses, ordinary and extraordinary	1,910,008 65
Leaving net	$649,332 27

An arrangement has been made with the Pullman Car Csmpany, by which their elegant drawing room and sleeping cars are run on your line—while an agreement has been made and is now being carried into effect with the Western Union Telegraph Company for the placing of an independent wire upon their line for the exclusive use of your company; this latter arrangement will, it is believed, reduce the cost of operating the road, by adding to the facility and consequent economy in the movement of trains.

Your wharf facilities were found insufficient to meet the increasing traffic in West India and South American produce, and has necessitated the extension of additional piers, which will be completed in the next sixty days, thereby doubling the present wharf capacity. These, with the increase of new cars and locomotives, and the thorough repairs of old ones, will enable you to commence the next fall business with better prospects than in any former season. New station houses have been built—old ones repaired—platforms increased and extended—thus adding to the facilities for doing an increasing business.

With all connecting roads our relations are of the most friendly character. Since your last meeting the New Orleans, Mobile & Chattanooga road has been completed between New Orleans and Mobile, and the connection through the city at your depot enables us to transfer freight and passengers without change of car, thus giving us all rail connection between the great cities of the West and New Orleans, *via* Mobile.

The Alabama & Chattanooga road is rapidly approaching completion, some four or five miles only being required to open the entire line, and in the next thirty days running connections with them may be expected. This, with the New Orleans connection, makes the road of this company a part of the shortest line from New Orleans to New York, and must add to your passenger traffic.

The St. Louis & Iron Mountain road has formed a connection at Columbus, Ky., by which freights are now taken without change of bulk, between Mobile and St. Louis. The advantage offered passengers to reach St. Louis without change of cars, will have the effect of increasing the travel.

The Mississippi, Gainesville & Tuskaloosa road, commencing at Gainesville Junction, on your line, and running to the town of Gainesville, on the Tombigbee River, was originally aided by this company, and secured by the bonds of that company. The disasters of the war so prostrated them as to forbid the prosecution of their enterprise, and they were compelled to succumb. The entire road, twenty-one miles, with all its property and franchises, was sold on the 20th of October last, and has been purchased by this company and incorporated into your line as the Gainesville Branch.

The importance of this purchase will be appreciated when it is remembered that by it you not only control a line running to the river, but that by an extension to the town of Eutaw, a distance of only sixteen miles, through a country peculiarly favorable for the construction of a cheap road, a junction is formed with the Alabama & Chattanooga road, and giving us the shortest line from the West to Selma, Montgomery and Western Georgia, by thirty-five miles.

The steady increase in your receipts since 1868,

Showing in 1869 an excess over 1868 of	$264,685 34
and in 1870 an excess over 1869 of	444,053 99
and larger by	110,054 83
than in any former year—while the first three months of the present year shows an excess over the corresponding months in 1870, of	180,127,09

is convincing proof of the steady improvement of the country tributary to your line. While the cotton crop of 1870 was much larger than that of the preceding year, the tables will show that your increased receipts are not alone due to the traffic derived from that staple.

The constant increase of mechanical enterprises are adding to the volume and diversity of your business, and to this extent changing the character of your traffic. One peculiarity of the Southern roads is that the larger portion of their earnings must be derived from freights, and as cotton forms the great bulk of that freight, a larger amount of rolling stock is wanted for the cotton season than can be advantageously employed the balance of the year.

The reports made by the station agents show that the industry of our people is being more diversified, the effect of which will be favorable to your interest.

During the past year there have been established along the line—of business houses, 151; saw and grist mills, 49; mechanical establishments of all kinds, 106.

Another new element of strength, and one of great importance to you, is the opening of the West India and South American trade with the great West, through the Gulf ports. This business has increased largely the past year, through the energy of Mobile merchants, and has so favorably attacted the attention of St. Louis dealers that they, too, are now importing coffee through Mobile. During the past year the shipments of coffee over this road show an increase of 18,000 bags over the previous year, and are being still further increased in the year upon which we have entered. This freight is of peculiar importance to your road, as it is all North bound, and aids largely in equalizing the tonnage as between the North and South—the great preponderance hitherto having been South bound. The confidence of the public is constantly increasing in the strength of your enterprise, as is shown by the enhanced market value of your securities.

CHIEF ENGINEER'S REPORT.

From the report of L. J. Fleming, Chief Engineer, and the accompanying tables we extract the following:

The earnings for the year were:

Passengers	$695,224 16
Freight	769,072 29
Mail	49,294 47
Express	54,750 00
Total	$2,559,340 92

The expenses were:

Repairs of roadway and bridges	$537,592 32
Repairs of machinery	449,326 10
Constructing transportation	925,180 23
Total	$1,910,008 65

The expenses were increased by large and unusual purchases of fuel for use the next year: by unusual purchases of cross-ties for renewals; by higher rates of labor; by the reconstruction of the two most expensive bridges on the line; by the enlargement of shops and additional supply of tools; by unusual repairs of rolling stock, some of which was worn out during the war, by the construction of additional side-tracks and connecting roads, and by unusual expenditures for re-rolling rails and new fastenings.

In addition to this, it was necessary to rebuild the Gainesville Branch—21 miles—which this company had purchased (which was so completely run down that there was but little of value except the grading and rails), and the completion of the Aberdeen Branch, which had been laid on a prairie soil in mid winter, and was unsafe for the passage of trains except at the very lowest rate of speed. These two branches being now controlled and operated by this company, required the additional expenditure, above 1869, due to thirty miles of road.

There were ten engines ordered February 4, 1870, for delivery in September following, but only five were received in time to perform any service before the close of the year. The iron work for two hundred freight cars was also ordered about the same time, and the larger portion of the framing for the cars was completed, but the delay in receiving the iron work rendered it impossible to complete more than one-half of them before the close of the year. The new rolling stock, therefore, contributed very little to perform the very large business done in moving the cotton crop between the first of September and the first of January, but the remainder of the cars, with one hundred more already ordered, and about fifty platform—to be constructed from old material—will be finished in time for, and will probably be sufficient for next winter's business.

One new, first-class, six-wheel passenger car has been finished, and another is in the paint shop, and will soon be completed. These cars—both passenger and freight—which have been constructed at the Whistler shops during the past year, are superior to any heretofore used on this road, and can be maintained in order, except wear and tear of wheels, axles and brasses, at about one-half the cost of the usual make. The passenger cars reflect great credit upon the mechanics who constructed them, and show that as good work, *at less cost*, can be done in the company's shops as in any other part of this country.

The average price of labor in road repairs was $1.39 per day against $1.13 per day in 1869.

Two thousand tons of new rails, weighing sixty pounds per yard, were ordered from England on the 16th day of July, but they were received after the close of the year—about one-half of them are laid down at the date of this report, and the old rails have been re-rolled as fast as they could be sent to the rolling mill.

The 2,000 additional tons recently ordered, together with those which will be re-rolled during the year, will more than compensate for depreciation, and place the track in better condition for next winter's business.

The roadway is now better drained, and the track and rolling stock have been in better condition than at any time since the war. The majority of accidents to freight trains during the winter have resulted from the rigid trucks on cars belonging to foreign roads, and fully confirm the experience during the war, and the opinions expressed in previous reports. This company has the right to say what kind of cars shall run upon its road, and if other companies forget, from false ideas of economy, the moral and legal obligations to construct their cars upon the plainest principles of safety, and fail to comply with promises repeatedly made to build other cars for exchange with this road, they should not complain if their business is subjected to the cost and delay of transhipment at the point of connection.

The rigid specifications for the manufacture of axles, and the severe tests to which all axles have been subjected, as stated in the last annual report, have produced the desired results, and there has been but four broken during the year, and these were old ones, and not branded, and the names of the makers unknown.

With the completion of freight cars alluded to, and the reconstruction of as many engines from the "scrap heap" as can be done by forces employed in the repair shop, the rolling stock will be sufficient, at present rates of passage and freight, to earn $3,000,000 during the present year.

And now that I am relieved of the labor and responsibility of running the trains, I ask the indulgence of those interested in the Mobile & Ohio Railroad, in whose service I have been for nearly fifteen years, to personal remarks. I have been connected with the railway system, as subordinate, or Engineer and Superintent, for thirty-five years, and for more than twenty-five years I have performed the latter duties, and it has been my good fortune to close every annual report as I now do this, with the gratifying intelligence that no passenger has been killed or seriously injured during the year, and will add that this is due to the vigilance and strict attention to duty of the employes.

Steel-Faced Rails.

There appears to be considerable progress making in combining steel and iron in the production of rails, with a view to giving all the strength and wear of the Bessemer at a much lower price. That such can be effected is sufficiently easy of proof, from the fact that the Great Northern and other companies are adopting those composed of the two metals for those portions of their lines where the traffic is very large and the gradients heavy. A few days since, whilst at the works of Messrs. Thomson & Co., at Normanton, we saw some rails made by the process patented of a puddling furnace being worked at the same place. The rolling of steel upon iron for rails and axles, and other sectional forms, is by no means complicated. * * * The rails, we were informed, were being put down on a line not far from Leeds, and we may expect, now that some of the railway companies have commenced laying them down, that more attention will be given to them, and that consumers will satisfy themselves by testing them in every way, with a view of ascertaining whether they are equal to what they have been described to be. If they are, then will a great annual saving be effected by our railway companies, and the inventors meet with the reward to which they are fully entitled.—*The Engineer.*

RAILROAD GAZETTE

PUBLISHED EVERY SATURDAY.

CONTENTS.

Editorial Announcements.

Correspondence.—We cordially invite the co-operation of the Railroad Public in affording us the material for a thorough and worthy Railroad paper. Railroad news, annual reports, notices of appointments, resignations, etc., and information concerning improvements will be gratefully received. We make it our business to inform the public concerning the progress of new lines, and are always glad to receive news of them.

Articles.—We desire articles relating to railroads, and, if acceptable, will pay liberally for them. Articles concerning railroad management, engineering, rolling stock and machinery, by men practically acquainted with these subjects, are especially desired.

THE CONVENTION OF THE MASTER CAR BUILDERS' ASSOCIATION.

On the 14th of June the Master Car Builders will hold their annual meeting in Richmond, Va. The "topics" which are prepared for discussion are of general interest to railroad men, and some of the subjects concern all persons who are obliged to travel by rail. In fact every improvement in the means of travel or transportation is of advantage to the whole community.

The first question for discussion is:

"Can the dead weight of the present form of passenger and freight cars be reduced with safety, and the cost of transportation be thereby lessened; and would not the adoption of some other material than wood in the construction of passenger and freight cars secure greater strength with less weight than we now have."

If the discussion should be limited to the "present form" of cars it would be a cause for regret, as it is not at all certain that the present form is the best possible. In fact, those who advocate narrow-gauge roads tell us that by placing the rails nearer together the proportion of dead or non-paying weight will be reduced in the same proportion. Upon this statement all the estimates which we have seen of the cost of narrow-gauge lines have been based. Now if this is true to the extent to which they say it is, *i. e.*, if the weight of a car can be reduced *because* the gauge is narrower and *cannot be* if it is wide, then much of the reasoning and the conclusions which the projectors of the narrow-gauge deduce therefrom are sound; but if, on the contrary, as many assert, the distance between the rails has only a very slight influence upon the weight of cars, then many of the statements which are made in relation to this subject are erroneous and misleading, and the country is in danger of being cursed with several new gauges, after lamenting for years that they were not made uniform in the beginning.

That the weight of cars could be materially reduced without lessening their strength, we think there can be no doubt, and that such a reduction would be a very great advantage is also very plain; but that in order to do so it is desirable or necessary to narrow the established gauge seems exceedingly doubtful. A very great reduction could, we think, be effected by a careful revision of existing plans, and a judicious reduction of useless material, which increases the weight without adding anything to the strength To do this, some skill and knowledge, both theoretical and practical, of the nature of the strains to which the parts of a car are subjected will be requisite. This is one of the cases in which theoretical knowledge will be of immense value. But any mechanic could do much to accomplish the object in view if he would only come to the convention prepared with accurate data of the weights of cars and of all their parts. If they would simply get a careful man, or boy, and have him weigh each casting and forging, all the bolts and nuts, and rods, springs, brasses, etc., and make a careful record of it, it would be a very valuable contribution and would supply useful information to those to whom it is not so accessible as it is to master car-builders. It would also enable the latter to make comparisons of the weight of their own cars with that of those on other roads.

The second question for discussion is: "What is the "best method of heating and ventilating passenger "cars, to insure safety from fire in case of accident, and "freedom from dust and cinders?" This subject is perhaps of equal importance to the first, and we hope the committee who were appointed to consider it will make a very full report, and that it will be freely discussed. If the members will only address themselves to the question of how fresh air is to enter the car, they will be considering what is in reality the most difficult part of ventilation, especially in cold weather. If, however, they persist in the idea which is so very common, that all that is necessary in order to keep the air pure is to make a hole in the top, they will lose sight of what is in reality the vital point in ventilation. The object in letting air which is foul out of a car is to permit that which is pure to enter. The first can be done very easily, but the second is more difficult, especially if the cinders and dust are to be excluded. If no other good is accomplished by the convention than to remove what is literally a *pestilential* idea, viz., that it is not necessary to bring pure air into a car in cold weather, then we think the meeting will have accomplished enough to compensate for the time and money expended in assembling.

The problem of summer ventilation, or the exclusion of dust and cinders from cars, does not, however, look very promising. We know of but two systems which are now in use, and they do not seem to be gaining ground or growing in favor. A very little experience in travel in dry weather in summer will soon convince any one that some simple means of excluding dust is very much needed.

With reference to the best plan for insuring safety from fire in case of accident, there will be a wide field for investigation, and many schemes for examination, as the fearful accidents which have occurred from the burning of cars have stimulated invention in this direction. It is singular that stoves made of heavy sheet or boiler iron, which would not be liable to fracture from collision, have not been more generally introduced, or attracted more attention. They have been proposed by several different parties, and we believe are now manufactured by some of them. A stove of this kind, securely fastened down to the floor, is probably the best protection against fire yet devised.

The following are the other questions for consideration and discussion:

"What is the best method of preventing loss of links and pins from railway-cars?

"What is the best and most economical form of oil-box and journal-bearing for passenger and freight cars—one that will insure freedom from overheating and economy in the use of oil?

"What is the best and most economical wheel and axle for use under passenger and freight cars, and at what pressure per square inch should wheels be forced upon axles?

"What is the best and safest method of hanging brakes on passenger and freight cars, and what is the best method of applying power to the brake to insure safety and economy in the running of trains?

"What is the best and most economical form for journal and center-motion springs for passeng r and freight cars? Also, the best plan of application for securing an easy motion to the car, and thereby economizing in the repairing of cars and tracks?

"What kind and form of roof is best for box and stock freight cars?

"What should be the standard number of threads to the inch for different-sized bolts, and what should be the thickness of nut in proportion to the size of bolt?

"What is the best platform for passenger cars, and the best method of coupling cars so as to prevent telescoping in case of collision or other accident?"

Besides these questions, there was a committee of five appointed to report on the best manner in which to paint passenger and freight cars.

It would require more time and space than we now have at our disposal to give even a cursory consideration of each of these questions. There are, however, several subjects to which we will venture to call the attention of the convention, as being worthy of their consideration. One of these is the amount of bearing surface which the journal of a car axle should have for each ton of load which it carries. For years past the weight of cars has been steadily increased, but the journal has not been enlarged in nearly the same proportion, and it is probable that on our heavy cars the bearings are now much too small for the weight they carry.

In this connection, it might be well to refer to lubricators for cars. Oil men have been, and are still, a perpetual plague to car-builders and purchasing agents. Would it not be possible for the convention, through a committee, to organize a complete apparatus with the most approved appliances for testing lubricators? Very few companies feel disposed to incur the expense of getting all the different instruments, nor is it probable that, if they did, their officers would have the special knowledge which is necessary in order to thoroughly test the quality and composition of oils in other lubricators. By some system of co-operation, it would be quite practicable for them to employ a good chemist, who might co-operate with the committee or some practical man whom they would appoint, and the two could thus carry out a series of systematic experiments, and through the members of the association the results could be tested practically on the different roads. Such experiments, if made intelligently and fairly, with the simple purpose of arriving at the truth, would be certain to result in great advantage to the railroad interest. There can be no doubt that those conducting such experiments would be subjected to great temptations, which only persons with the highest sense of honor and integrity would be able to resist.

With reference to brakes, it is doubtful whether it will be possible for the committee to make a thorough report this year. Several plans—notably the Westinghouse brake—are now before the public, and have been put into successful use. Several others are now being experimented with and it seems probable that within another year some of them will become rivals of each other. It is, therefore, desirable that this committee should be continued, and that the scope of their inquiries be extended.

There is one other subject to which the att ntion of the convention is called. On some roads all passenger car trucks are provided with "check" or "safety chains," on others they are never used. If they are useless as a measure of safety, then the expense of putting them on is so much waste. If, however, they will keep a truck in line with the track after leaving the rails, and prevent its turning crosswise then it is very important that they should always be us d. Doubtless if they are of service in the way we have indicated, many of the members of the convention will be able to cite instances where this has occurred; but if the chains never do keep a truck in line when it leaves the track, but are broken by the strain on them, then there is very little reason for putting them on cars.

With regard to the organization of the convention, it seems desirable that as little as possible of its time should be employed on unimportant business. At the me ting of the Master Mechanics in Philadelphia, last fall, considerable time was wasted by hearing letters read and passing resolutions which were of very little interest or advantage to any one. All such matters might be referred to an executive committee without coming before the convention at all.

The New York Viaduct Railroad.

The New York *Tribune* under head of "Quick Transit," gives an elaborate account, accompanied by a map, of the lately chartered viaduct railroad of the city of New York.

The proposed route is to consist of two l nes, both starting from near City Hall Park, at the New York end of the East River Bridge, and running together through Mulberry street as far north as Bleecker street. Here separating, the eastern line follows Second and Third avenues to the Harlem River, as far north as One-hundred-and-thirtieth street. The western branch follows Bleecker street to Sixth avenue, up this avenue to Broadway, parallel to Broadway as far as Ninth avenue, and finally between Ninth and Tenth avenues to Westchester.

The distance between the termini of the proposed line will be 7½ miles, to which must be added 1 1-10 miles, the length (including approaches) of the East River Bridge, which structure is to be made use of as a part of the proposed route.

"The railroad will be built on brick arches, supported by heavy iron lateral columns, themselves supported on inverted arches of solid masonry, built into the ground. A thick bedding of earth, on which the tracks will be laid, will deaden the sound of passing trains, and tend greatly to reduce the reverberation."

The road will be carried on bridges over the streets, and pass through the blocks, either traversing the back yards of houses or stores, or, when near the street, forming the roof to a series of arcade stalls fitted up as stores, markets, bazaars, or for manufacturing purposes.

The main line will have four tracks, two for slow and two for fast trains. The charge will be about one cent per mile, or seven cents for the whole distance, and the running speed of the trains will be about twenty miles per hour.

PASSENGER CAR BUILT BY THE CHICAGO & ALTON RAILROAD COMPANY.

We present our readers this week with very elaborate engravings of one of ten passenger cars built by the above road for their through line between Chicago and St. Louis. These cars, we think, are superior to any day coaches now running anywhere in the country, with, perhaps, the exception of some "drawing-room" cars. But, for ordinary day travel, no other railroad company in the country affords better accommodations than this line. No illustrations have ever been published which show the construction of an American car so perfectly as do these which we give. All the dimensions can be taken from them, as the scale is given.

The cars have Reniff & Buttolph's summer ventilator, which passes the air over water, thus separating all the dust and cinders from it. The air is taken in by two hoods at each end of the car. The water tanks are located in the roof in front and behind the raised portion of it. One of them is shown in the longitudinal section of the car. After passing over the water the air is carried down and enters the car through wire netting in front of the stove. This arrangement is said to work very satisfactorily. The air is completely deprived of dust and cooled to a very agreeable temperature.

The cars are lighted with gas, which is carried in a gas-holder not shown in the engraving.

It will be noticed by practical car-builders that the framing differs somewhat from that in use on some other roads. We hope in future to give illustrations of the systems which other companies use. Generally, the bracing in the sides of cars is so hid that unless a car is seen during the process of construction or repair, very little idea can be formed of the arrangement of the braces.

The finish of these cars, both inside and outside, is equal and in some respects superior in workmanship to any other we have ever seen. Every convenience is provided for passengers, and the upholstery is of the best description. Between each pair of windows is a large mirror. Without the ventilating apparatus, the reflection of begrimed faces might have caused more annoyance than pleasure; but with the air purified from dust and the exhilaration produced by breathing a pure atmosphere, it is not painful to see one's image, even though the crow-feet do begin to show.

The Chicago & Alton road, having as its termini the two chief cities of the West, and on its line several of the largest and wealthiest towns of Illinois, has a large passenger traffic of more than ordinarily fastidious travelers. It has for many years been among the first of American railroads in the character and quality of its passenger equipment, and though the progress in comfort and luxury has been rapid of late years, these truly elegant coaches show that the Chicago & Alton remains a leader rather than a follower in all rational improvements.

The coupling arrangement, which is peculiar to the cars of the Chicago & Alton Company, is the invention of the President, Mr. T. B. Blackstone. The platforms of adjoining cars are drawn and held very closely together, and two sills or beams project about sixteen inches beyond each platform. The outer ends of these sills are somewhat beveled at the sides, and on the top considerably, commencing about six inches from the end, and from that point outwards and downwards at an angle of about twenty-three degrees. The object of this bevel is to allow the sills of adjoining platforms to pass readily, and also to allow the cars to assume the proper position when running on curves, without straining the timbers or platforms. It will be seen that this position of the projecting timbers—each passing by the other and under the opposite platform—will prevent one car from getting out of line with another to any considerable extent, either vertically or transversely. The inventor states the advantages secured by the arrangement as:

"1st. Immunity from danger in passing from one car "to another."

"2d. Safety in case of accident to, or derangement "of the running-gear, or displacement from the rails."

"3d. Preventing the 'telescoping' of cars."

"4th. Great steadiness of motion. By the use of "this improvement as great steadiness can be secured "with four-wheeled trucks as is now found with six and "eight-wheeled ones."

"5th. Rendering more certain the operation of train "brakes."

When cars are so constructed, and the platforms are brought together and held on the same level, couplings of the ordinary form are not found to answer the required conditions, as the cars must be held together with considerable firmness, and yet so as to yield somewhat. The coupling invented for the purpose is shown in the illustration. The principal portion is made with parallel sides and is provided with a buffer-head and link-opening or mouth, in the usual way, except that the opening has more vertical space. The outer end of the sliding-head, *a*, is provided with a fixed pin or bolt, *n*, which holds the rear end of a link, *l*, and keeps it in its place. The bolt, *n*, is set in the rear of the draw-bolt or pin, *p*. Each coupling is provided with a link, so that when brought together there will be two links in each connection.

Between the sliding head, *a*, and the heel-piece *a'*, is a right and left screw-bolt or rod, *s*. The coupling rests against the rubber spring, *r*, and is held in place by the rod which passes through the rear end of the coupling, through the spring, the cross-sill and a similar spring behind the cross-sill, and is adjusted by the nut, as shown. By means of this nut the springs, *r r*, are compressed to about one-half of their springing capacity, and, when two cars are brought together and the links caught, the rod, *s*, is turned until the draw-bar heads, *c d*, are brought together with considerable pressure, and the cars are held so firmly that there will be no jerking when starting, and still sufficient elasticity will remain to answer the requirements of rubber springs.

The cars are uncoupled by unscrewing the rod, *s*, which relieves the links so that the pins, *p*, can be withdrawn.

The draw-bar head is provided with holes, so that, when the head, *a*, is drawn back, links and pins may be used in the ordinary manner, if for any reason it should be desirable.

A trap door is constructed in the platform, immediately over the rod, *s*, so that the rod may be turned without getting under the car. A ratchet wrench may be attached to the rod so as to operate it more rapidly; it can, however, be operated successfully by an ordinary wrench.

In case the wheels, axles or other running parts of one car should be broken, the damaged car would be sustained and carried on the projecting sills of the adjoining car.

This arrangement has been used on passenger cars of the Chicago & Alton Railroad for about two years, and has proved so satisfactory that all the cars of that road are now made with it.

"PALACE" HORSE CARS.

The Third Avenue Railroad Company, of New York, is now trying the experiment of running a "palace" car on its line. It has but one completed, which is probably only an experiment, although it is reported that the company is building ten more. The one which it now has running makes four trips each day, leaving the City Hall at 8:55 and 11:55 a. m., and 2:55 and 5:55 p. m. It is a four-wheeled car, with Higley's patent running-gear and brake. The body is somewhat larger than an ordinary car. The ends are rounded and have no platform. The driver occupies a sort of niche in front, and the doors and step are inside at the rear end. The car is turned at each end of the road. It has seats for 28 passengers. There are sixteen revolving chairs in the center, and two sofas at each end, those in front accommodating two passengers each, and those at the rear four. The sofas have a short arm which divides the seats from each other. This arm, instead of extending all the way across the seat, projects only about eight inches from the back. This obviates the objection to divisions between the seats, which is that the arms are in the way and inconvenient for ladies' dresses.

The back doors—by which all the passengers must enter—are opened by a peculiar and ingenious arrangement of a crank with a sort of knuckle-joint lever, the invention of Mr. Dickinson, the Superintendent of the road.

There is also a speaking trumpet from the rear end, where the conductor stands, to the driver in front. All the metal work in the car is silver-plated, even to the spittoons. The windows are of large plate-glass and hung with counterweights. At the front end of the car is a clock and water-tank. The latter is located over the driver's head, and has a pipe leading down to a convenient position for passengers. The wood work of the inside of the car is bird's-eye maple with walnut mouldings.

The following notice is placed in a conspicuous place inside:

"NOTICE.—*This car is run only for such passengers as* VOLUNTARILY *pay the conductor* 10 *cts. for their seat, in addition to the fare.*"

No more passengers are allowed to enter the car than can be seated, and at each end are two signs with the word "FULL" in large letters. These are displayed as soon as all the seats are occupied.

The upholstery is of the usual magnificent (?) palace-car style, and is not any more unfit for the purpose for which it is intended than such furnishing ordinarily is. It, of course, is exposed to the dust which, excepting in wet weather, always attends this kind of travel. An expensive textile fabric, which absorbs and retains dust, and whose delicate color shows every spot, would seem obviously to be unfit for service in any railroad car. The injury to it from this cause in sleeping cars is so great, that generally the porters and conductors, in order to keep out the dust, exclude nearly all the fresh air. In order, therefore, that passengers may travel in so splendid a style in sleeping cars, they must consent to forego fresh air, and breathe an atmosphere which has been poisoned by the breath of others. Otherwise, the gorgeous upholstery would be spoiled.

It would, therefore, probably be wiser to fit up "drawing-room" cars for horse railroads, more with an eye to utility, and less to show. The seats would not be any less comfortable if less showy, nor the floor if covered with some material less absorbent of dirt than a carpet.

What the public now complain of—and very justly—is the overcrowded and unclean condition of street cars. Our sisters, and wives, and daughters are now obliged to occupy places in such disagreeable personal propinquity to dissolute ruffians that they are constantly liable to the grossest insult. Singularly, too, if these same persons were to occupy similar positions anywhere else we would either knock them down, or be prostrated in the attempt. In a public conveyance, however, we have come to regard it as all right, and we meekly bow our heads when the conductor comes round to pack us closer than sardines. What a portion of the public want is clean cars, not over-crowded, for which they would be willing to pay a reasonable price. Give us cars of this kind at a fair price, and very few will care for any show of silver-plated spittoons or frowzy upholstery. The price which the Third Avenue Company charge is exorbitantly high, and so much so that comparatively few would feel justified in paying it. The public want better accommodation, but it is doubtful whether they will be willing to pay three-fold for it. It is to be hoped that some company will try the experiment of running ordinary cars, which are kept clean and have divisions—similar to those we have described—between the seats, and charge not above *two* or three cents more, than in the other cars. The public would patronize them, we feel sure, if no more people were admitted than can be seated; and at the same time the receipts of the company would not be reduced but rather increased thereby.

A NEW CHICAGO RAILROAD.

A short time ago we gave an account of the condition of the Chicago & Danville Railroad and its prospective value to Chicago. To day we have some information to give of another railroad from Chicago southward, which is likely soon to be completed, and is likely to become an important line. This is known as the "Decatur & State Line Railroad," a name which hardly gives any true idea of the line, having been adopted, we believe, when a route was contemplated different from that finally selected. The line, as finally located and put under contract, extends from Mokena, a station on the Chicago, Rock Island & Pacific Railroad thirty miles southwest of Chicago and ten miles east of Joliet, nearly on an air line and almost exactly halfway between the Chicago & Alton and the Chicago Branch of the Illinois Central, to Decatur, Ill., a distance of about 130 miles, crossing the Peoria, Toledo & Warsaw Railway at Chatsworth, the Lafayette, Bloomington & Muncie at Saybrook, the Springfield, Gilman & Clinton (soon to be completed) about five miles south of Saybrook, and the Indianapolis, Bloomington & Western at Farmers' City. At Mokena, the northern terminus, the new road will be ten miles from the Illinois Central and the same distance from the Chicago & Alton; at Chatsworth it will be fifteen miles from the former and twenty miles from the latter; at Saybrook, twenty miles from either; at Farmers' City, twenty-two miles from the Illinois Central and twenty-four from the Chicago & Alton; and at Decatur, thirty-five miles from the former and thirty from the latter. The distance is sufficiently great to afford a good traffic, though, doubtless, it would have been better had the road been constructed before the cross roads—the Springfield, Gilman & Clinton, the Lafayette, Bloomington & Muncie, and the Indianapolis, Bloomington & Western, all of which were commenced within a few years past and only one of which is as yet in operation. It certainly was a much more promising scheme than many which have secured means for their realization in the two or three years past.

By itself, the line is isolated; but a contract with the Chicago, Rock Island & Pacific Company secures it an

entrance into Chicago and the use of its stations, and a similar contract with the Toledo, Wabash & Western gives it the use of the Decatur & East St. Louis Railroad. Thus it will be able to run trains through from Chicago to St. Louis on a line which will be only about 270 miles long, which is ten miles shorter than the shortest existing route.

The contract for the construction of the entire road from Mokena to Decatur has been let to the firm of Snell, Taylor & Co., the well-known railroad builders, of this city, and they have the work nearly all sub-let, and grading is progressing at several points on the line, the headquarters of construction being at Mokena. By contract the road is to be entirely completed by the end of next year; but the contractors expect to finish it considerably earlier.

The Directors of the Decatur & State Line Railroad Company are: F. H. Winston, Abner Taylor and H. H. Porter, of Chicago; M. S. Sullivant, of Ford County; John M. McNulta, of Bloomington; J. J. Peddecord, E. O. Smith, W. L. Hammer and O. Powers, of Decatur; William C. Shirley, of Stanton; John Stillwell, of Chatsworth; J. R. Means, of Saybrook; Lee A. Hall, of Clarksville, Mo., and J. C. Prescott, of Peoria.

F. H. Winston (also President of the Chicago & Southwestern Company) is President; E. O. Smith, Vice-President; George C. Campbell, Secretary; O. R. Glover, Treasurer; S. B. Carter, Chief Engineer, and E. H. Johnson (Chief Engineer of the Chicago, Rock Island & Pacific), Consulting Engineer.

The Westinghouse Air Brake.

We have now in the engraver's hands drawings of this brake, which will show its entire construction and application. The engravings will occupy not less than two full pages of the GAZETTE, and will show the application of the brake to a train, and also complete details of the different parts. Persons who wish extra copies will please send in their orders as early as practicable.

The Iron World and Manufacturer.—This journal, which was established in Pittsburgh a little more than a year ago as an organ of the metal trades, shows marked signs of prosperity. It is now printed with new type, on handsome paper, and makes a fine appearance. It is valuable especially for its reports of the hardware and metal markets in Pittsburgh and other principal cities, which are given fully and in detail. We are informed that it has already a wide circulation, and it must be of real value to those who buy, sell or manufacture metals, hardware, etc.

—An English paper says: "The new express train from Plymouth to London will probably be the fastest train in the world in the part of its journey which lies over the Bristol & Exeter and Great Western railways. Leaving Exeter at 10:30 it is time to reach Paddington at 2:45, including a stoppage of five minutes at Bristol and the inevitable and vexatious ten minutes at Swindon, the journey of 194 miles will occupy four hours and a quarter. The Irish limited mail, hitherto considered the fastest train, occupies six hours and thirty-five minutes between London and Holyhead, being at the pace of only 170 miles in four hours and a quarter. The fastest train on the Great Northern line is between London and Petersborough, seventy-six miles, which is done in one hour and thirty-seven minutes; but the Great Western accelerated express will run from Swindon to London, seventy-seven miles, in one hour and twenty-seven minutes. The 11:45 train from Paddington will perform the journey to Plymouth in only five minutes more time than the new up express."

—When the Newark & New York Railroad was opened, the fare, which before had been twenty cents, was reduced to fifteen cents, and the tickets were made good until used, instead of for one day only, as the rule had been on the old lines. But the officers of the new road complain that the conductors did not turn over the tickets which they took up, but sold them at a discount, and the old rule was restored for a time, much to the disgust of the patrons of the road. An improved ticket was made, and these were made good for the year.

—Thos. Speakman, Esq., has received notification from the Secretary of War that his plan, marked No. 2, for the construction of a bridge across the Delaware River, between Camden and Philadelphia, has been accepted by the War Department. The specifications call for two spans of 1,150 feet each, and two of 546 feet each.

—Out of 307,000,000 people carried on English railroads in 1869, only 17 were killed by causes beyond their own control, while in the streets of London 140 persons were killed, and it is estimated that the orange-peel on London pavements kills more people than all the English railroads.

—The great Peninsular & Oriental Steam Navigation Company, of England, has recently added two new, large, iron screw steamships to its stock, and it has three more well advanced towards completion. The five will be among the finest ocean steamers afloat.

Contributions.

AN AMERICAN ENGINEER IN ENGLAND.

The London Underground Railroad—English Station Arrangements—Advertisements in Coaches and on Station Walls.

The Metropolitan and Metropolitan District railways form, in London, what is commonly known as the "Underground Railway," and although the track is continuous between the extreme ends of the elongated U (which is the general outline of its course), yet the line is owned by these two distinct companies. The present ending of the south arm (as it may be called) of the line is at the Black-friars Station, although the extension of the line farther east, to the Mansion House Station, is rapidly progressing. This Mansion House Station is very near the Bank of England and other points of commercial importance, and, in fact, not more than three-quarters of a mile from the present terminus of the north arm of the line at Moorgate street, although the distance between these endings, as traveled upon the line, is about twelve miles.

The arrangement of the Black-friars Station is substantially the same as that of all the way stations along the line. There is a single switch from one track to the other, by which each train in turn is switched (or *shunted*, as the term is here) from the up to the down line; and an engine that has just brought in a train takes out the next one that arrives, the engines and cars thus performing a continuous service.

The station building is on the east side of the road leading on to Black-friars Bridge, which crosses the Thames here, and is close to the bridge itself. It is built of the common white or pale yellow bricks which are used for all, or nearly all, the brickwork in the stations on this line, and it is about 60 feet in front, 50 feet deep and 18 feet high. On the outside walls on each side of the door are posted various railway placards, from time to time, those now up being one relating to the running of trains on Good Friday (that it will be as on Sunday, when fewer trains are run), two or three giving the usual times of departure of trains, one giving an outline map of the line and showing all the stations with the principal points of interest and the public buildings lying near to each, and one showing special arrangements of trains for Easter holidays.

Just at the top of the front wall of the building is a large sign giving the name of the station and the principal points reached by the trains.

Some of these large out-door signs, however, are badly drawn and printed, both in respect to their tasteful appearance and of their practical utility. The letters are so large that the words are entirely run into each other and have no individual distinctness. The wrong words, too, in many cases, are made prominent (although it is true that these same mistakes are often made in the United States), so that the significance of the announcement is entirely obscured or lost. On some of them an attempt is made to give an antique or otherwise ornamental shape to the letters, but this is done almost universally at the expense of the legibility of the whole. In some of the signs placed in the stations on the Underground Railway, and on some other lines, the exact thing seems to have been hit upon, and their clearness leaves nothing to be desired. These are made, many of them, at least, of enamelled iron, the ground being dark blue and the plain square block letters are clear white, the color in each case being fixed in the enamel. The letters on the station signs are about 8 inches high, and the signs vary in length from two feet to twelve or fourteen feet, as may be needed. Observation in other directions besides this seems to show that the black or very dark ground with the plainest white letters makes the plainest sign, whether used for a railway station or for a commercial house, especially if it is required to be seen or referred to in the twilight or the night. I venture to press this suggestion most strongly upon those who have new station signs to make, assuring them that the traveling public will fully appreciate such a means of making their journey with exact knowledge of their location for the moment upon the line. One other remark may be made in this connection, that it would be much easier to read or to recognize these signs when the train is rapidly approaching or passing the station, if they were placed further away from the track than is commonly the case here, and in many instances they might be so placed, as when the station is in the country and open spaces or fields be immediately behind the ptatforms. If, as it is, however, the station walls here were only cleared of the intolerable nuisance of *advertisements*, greater distinctness would at once be given to the legitimate announcement of the station name.

At the Black-friars Station a wide door opens from the street into a hall 25 feet wide, and on one side of this hall is the "booking office," for the sale of tickets. This peculiarity of old stage times is still retained, all our "ticket" offices being here known as "booking" offices. On the other side of the hall is a refreshment room and one or two rooms for the station officials. On each side of the entrance door are large plate-glass windows lighting this central hall. The three small windows which open into the ticket office are guarded by a wire netting, and through a hole 6 in. by 8 in. in this the money and tickets are passed. There is generally no counter or shelf whatever outside of these ticket windows; and at stations where the traffic is large, one window is given to the first and second classes and one to the third, and sometimes one window is assigned to each. A short wooden hand-rail upon iron posts is set about two feet in front of these ticket windows. Among the notices posted in this station is one forbidding smoking in any station or on any platform or carriage, as these companies have special permission to forbid smoking anywhere on the line, on account of the difficulty which it was supposed would exist, of ventilating the tunnels in which the greater part of the line is built. Just now, however, there is a good deal of agitation against this restriction, which will very likely end in its removal. There are also two or three time-tables of other railway lines posted here, and one giving a new service of trains early in the morning from some suburban point, for the accommodation of workmen, who return by any of the ordinary trains in the afternoon or evening.

A door on the opposite side from the entrance leads from this hall to a stairway, by which the passenger descends to a gallery or bridge which crosses from side to side of the open space, above the tracks, and by which access is had to either side platform by a second and longer stairway, which is built close against the side wall. At the foot of the first stairway a man punches or nips the edge of the tickets of all entering passengers. Another staircase from the main platform on each side is provided, and a second gallery, by ascending and crossing which passengers find their way out, from either platform, through a door entirely distinct from that at which entrance to the station is obtained, and at this station all the tickets are taken at this door, by a man stationed there for the purpose, from the passengers who have just arrived by the trains.

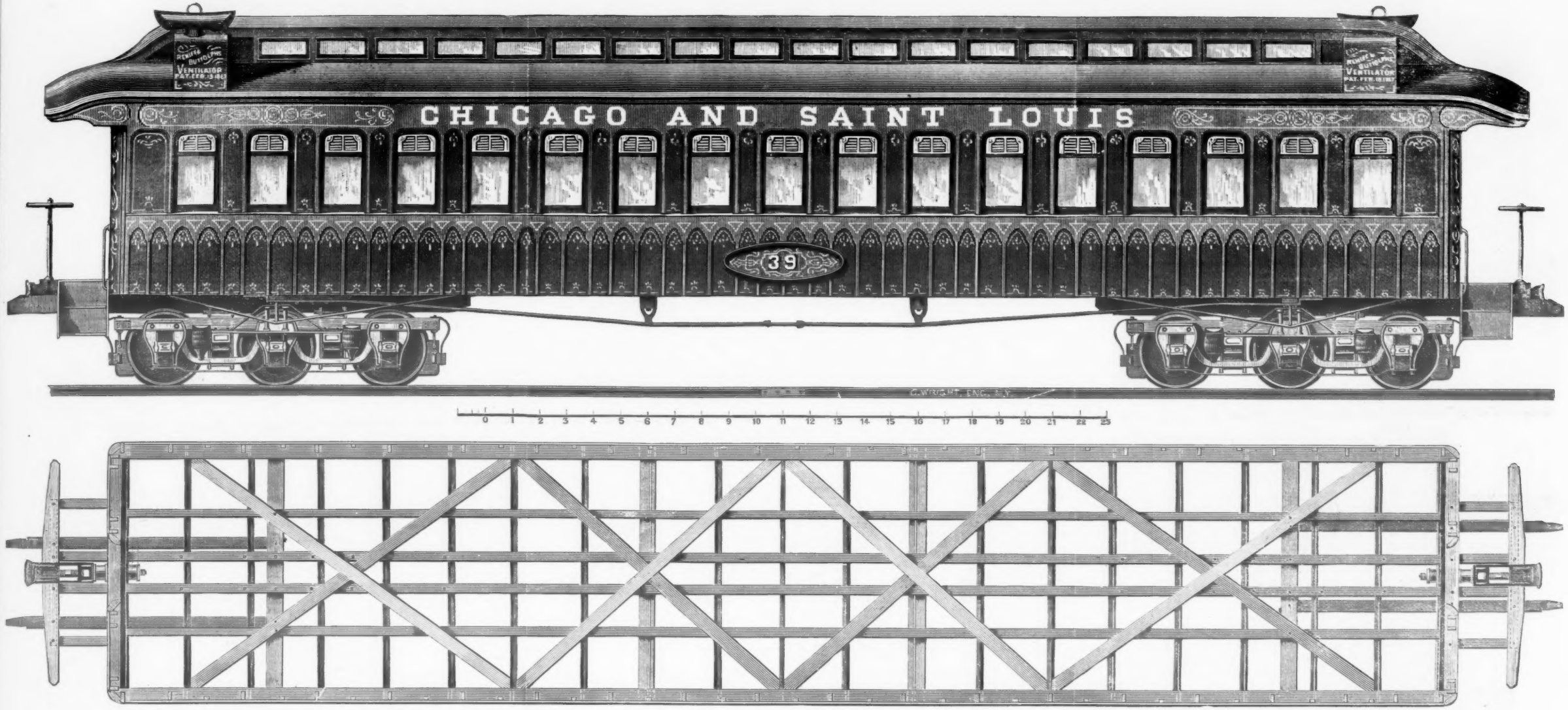
This system of separating entirely passengers who enter from those who leave the station, is almost universal, even at small places—an arrival platform being provided entirely distinct from the departing platform.

The steps upon some of the staircases on this railway are covered with a peculiar arrangement of small pieces of wood, set in an iron frame, with the end of the grain as the wearing surface. These pieces are about 1¼ in. square, and ½ in. high, and project a little above the iron frame in which they are set, and they are said to wear exceedingly well.

Some of the staircases have simply the usual brass strips, screwed to the wooden plank, but generally throughout England such steps are made of stone, whenever it is at all practicable; but unfortunately, in many cases, sufficient care was not taken to get a hard and durable stone, and hence many of the stair-cases at stations are very badly worn, and they have sometimes been repaired by putting in thin slabs or slips of stone to renew and bring up to its original level the worn edge of the step. The train platforms at Black-friars are made of planks about 4 inches thick, which are laid upon beams resting upon brick walls. These walls, at the front of the platform, or next to the track, are of the usual white brick, and as the ballast is kept carefully trimmed, the whole line has a very neat look in these stations.

The whole interior space of the stations may be described as being an enlarged rectangular tunnel, from which the brick roof has been removed, and sometimes replaced by an iron and glass roof, and sometimes the interior is left open to the sky. The length of this space—that devoted to platforms to afford access to the trains—varies with the importance or the location of the station, and is generally from 300 to 600 feet. It not unfrequently happens, as at this Black-friars Station, that some one of the city streets crosses this open space devoted to the station, and hence a substantial bridge must be put up for it. In this case the street is carried upon four 14-inch columns with plate-iron side girders and a covering of brick arches.

The platforms are from 16 feet to 20 feet wide at different stations, and in some cases, where there is no roof covering the whole interior of the station, a low glass roof is put up, which projects from the side walls and extends along the platform, to shelter passengers

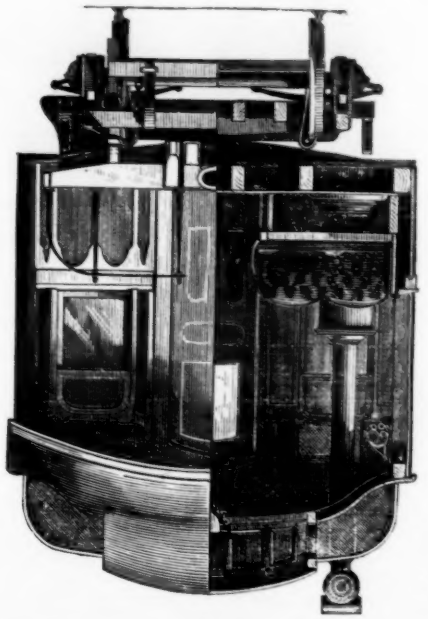


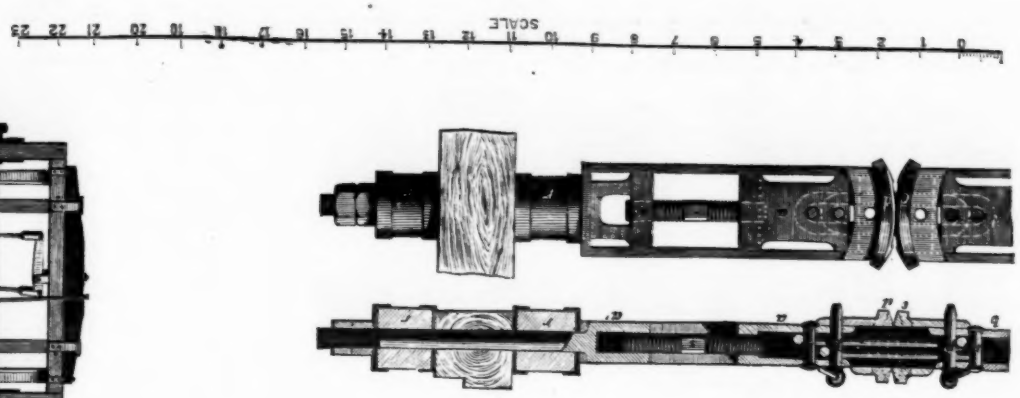
PASSENGER CAR,

WITH BLACKSTONE'S IMPROVED PLATFORM AND COUPLER.

Built in the shops of the Chicago & Alton Railroad Company, Bloomington, Ill. R. RENIFF, Master Car Builder.

(For description see page 123.)

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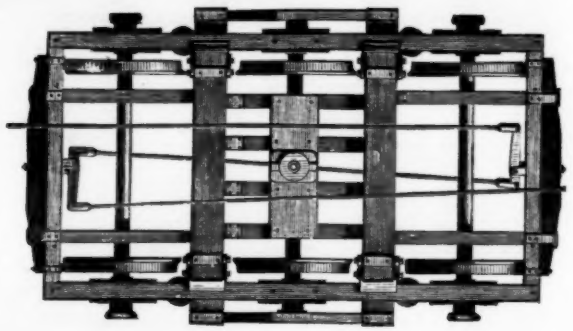

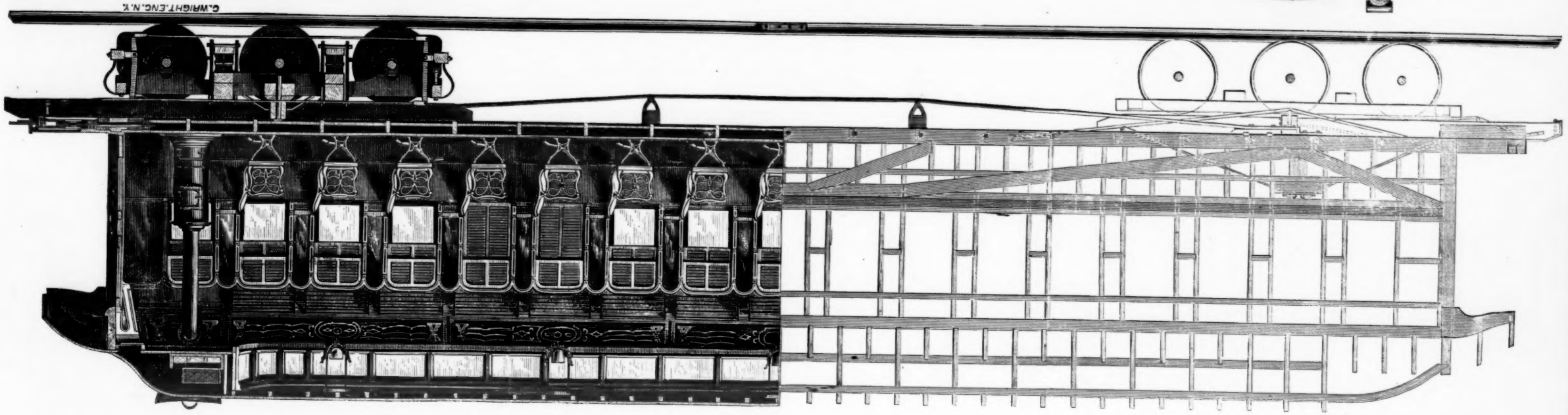
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while waiting or entering the carriages. Sometimes this roof is held entirely by brackets bolted to the side walls, and in other instances a row of light columns is fixed to support the edge of the roof nearest the track.

At Black-friars, on each side of the station, and placed between the buttresses of the side walls, are four or five wooden seats for the convenience of those who may be waiting.

Between the tracks, and projecting a few inches above the ballast, are several gas-pipes, with cocks and hose, so that the tanks or gas-holders on the carriages may be conveniently filled when required. At the point where an engine stops on arriving at the station a pit is made and lined with brick, into which is discharged, from the tank of the engine, the water which has become heated by the discharge into it of the exhaust steam from the cylinders during the passage through the tunnels, and a fresh supply is at once run into the tank from a water crane, which is fitted with a canvas leading-tube for the water.

In one of the third-class carriages, in which I have ridden on this line, the side door and the space between the seats is 21 inches wide, the inside width of the carriage being 7 ft. 8 in. The plain board seat is 18 in. high from the floor and 19 in. wide, the back of the seat rising 2 ft. 2 in. above the seat; for this carriage is open from end to end, although each pair or set of seats has its own doors, and is, in that respect, shut in to itself. The glass in the window on each side of the door is 14½ in. wide by 24 in. high.

From Black-friars to Westminster Bridge, a distance of about 1½ miles, the line passes under the roadway of the Thames embankment, which has been built within a few years past for the purpose of straightening somewhat the bank of the river, and for relieving, if possible, the crowded streets in the adjacent part of the city. As the street level along the embankment is but 5 or 6 feet above high-water mark, the railway track is quite below this water line; but as the tunnel is built some distance back from the face of the embankment, and especially as the heavy face wall is carried down to a very substantial and deep foundation, no serious difficulty could ever occur from the nearness of the tunnel to the river.

Along the embankment, however, the tunnel is roofed over with iron girders with brick arches turned between them, so that the track is thus put at a less distance below the surface of the street than it could be if a brick arch spanning the whole width of the tunnel had been used. These beams or girders are carried on the side walls which are strengthened under each beam by buttresses.

At the Charing Cross Station, about one mile from Black-friars, side tracks are put in for future use.

At St. James' Park Station a short switch has been laid, which now stops at an oblique arch, turned very neatly in the brick work, through which it is plainly designed to make, in the future, connection with some line coming in from another part of the city, but which is not developed yet. At this station the railway advertising nuisance, which seems to have spread over nearly the whole kingdom, is very prominent. Some advertising agent, or the dealer himself, has painted on a sign the name of his stuff in a style and color almost identical with that of the railway sign giving the name of the station, and this advertising placard is posted just above and close to the name of the station, so that a stranger would hardly feel sure whether he had arrived at "Maravilla Cocoa" or "St. James's Park."

In many of these carriages the same advertising mania is rampant, and the upper part of the partitions between the compartments is given over to such interesting subjects as "Fine Black Tea," "Silks and Shawls," an assurance company, two tailors, two furniture movers, an advertising agent, two newspapers, a bleacher, also two magazines, cocoa, guns, starch, cough medicine, and minstrels. Fortunately, few people have to travel far with such thrilling subjects thrust upon their attention, or they might be disposed to thrust them all out of the window. No one would object, either here or elsewhere, to a legitimate use of railway station walls for advertisments of trains and railway connections, but the thing is carried here to an utterly offensive extent, good judgment and propriety being alike unheeded by the agents, who are contractors for such matters. How large a revenue is derived from the renting of walls for such purposes is not readily to be learned, but as few stones are left unturned here to secure a penny, it is fair to suppose that these advertising contractors make something by this means, whether the railway companies do or not.

The plan seems to be for a firm, say Obstinate & Co., to hire from the company a whole side of a large station, or all the stations on any one line, or the interior of some of the carriages, for advertising purposes, and then to post up from time to time, as application may be made to them, the hundreds of things that dealers like to put by every possible means before the public.

Milwaukee & St. Paul Railway Report.

This company now owns in its own right, 1,018 miles of track, being an increase during the year 1870 of 103 miles, consisting of the extension of the Iowa & Dakota Division from Nora Springs westward to Algona in Iowa, 63 miles, and the track connecting the above division and also the Central Railroad of Iowa with the Iowa & Minnesota Division from Mason City, in Iowa, northeast to Austin, in Minnesota, 40 miles, both purchased—the stocks and bonds of the company being given in payment therefor. The lines of the company are as follows:

	Miles.
Milwaukee to Prairie du Chien	193
McGregor (opp. Prairie du Chien) to St. Paul	212
Milwaukee *via* Watertown, to La Crosse	196
Milwaukee *via* Horicon, to Portage	95
Horicon to Berlin and Winneconne	58
Watertown to Madison	37
Milton to Monroe	42
Calmar to Algona	126
Conover to Decorah	10
Austin to Mason City	40
Mendota to Minneapolis	9
Total length of track January 1, 1871	1,018

The average length of track in use in 1869 was 858 miles, and in 1870 about 950 miles.

In addition to the mileage here recorded, the company own $2,001,000 of the capital stock of the Western Union Railroad (200½ miles), being a majority of the shares thereof, and hence control that property. The cost to the company of this purchase was $1,500,750 or 75 per cent. of its face value, paid for in the common stock of the Milwaukee & St. Paul Company.

The equipment of the road at the close of 1868, 1869 and 1870 compares as follows:

	1868.	1869.	1870.
Locomotives	133	145	155
Passenger cars, 1st class	64	71	77
Passenger cars, 2d class	10	10	109
Sleeping cars	6	9	9
Baggage, mail and express cars	53	54	58
Freight, box	2,070	2,273	2,373
Freight, flat and stock	430	480	580

In the following table is shown the mileage of trains, the passenger traffic and the freight traffic on all the roads collectively for the years 1868 and 1870:

	1869.	1870.
Passenger trains	946,786	963,862
Freight trains	2,063,899	2,311,454
Wood and gravel trains	337,874	441,918
Total mileage	3,388,559	3,760,174
Passengers carried	810,903	810,060
Passengers carried one mile	45,408,400	43,918,671
Revenue from passengers	$1,781,135	$1,735,151
Freight (tons) carried	1,344,358	1,542,753
Freight (tons) carried one mile	157,749,854	181,428,573
Revenue from freight	$4,901,525	$5,148,356
Passenger revenue per mile	3.89 cents	3.88 cents
Freight revenue per mile	3.10 cents	2.82 cents

The following is a comparative statement of the earnings and expenses during the years ended December 31, 1869 and 1870:

Earnings from:	1869.	1870.
Freight	$4,909,225 02	$5,148,355 86
Passengers	1,781,184 77	1,735,153 91
Mail service	78,551 58	80,866 06
Express service	233,691 92	158,870 58
News service	4,650 00	4,950 00
Rents	8,077 11	8,067 01
Telegraph	4,291 61	6,518 15
Extra baggage	8,485 81	7,435 45
Sleeping cars	30,439 00	32,053 50
Elevator "A"	80,472 30	97,513 57
Elevators "B" and "C"	85,635 95	106,407 88
Elevator "D"	19,179 32	23,997 97
Stock yards	6,634 26	10,871 49
Total	$7,251,668 68	$7,421,061 43
Expenditures (ordinary)—		
Repairs of track	$615,595 95	$684,024 53
" bridges	34,189 19	39,248 15
" fences	3,902 92	2,475 30
" buildings	88,901 90	91,301 70
" locomotives	252,931 60	275,088 26
" cars	473,323 45	522,537 73
" tools, etc.	36,738 19	39,332 49
Management and general office	111,772 01	114,025 67
Foreign agency and advertising	24,698 68	24,370 11
Station service	416,553 81	506,720 44
Conductors, baggage and brakesmen	212,772 04	246,521 19
Engineers, firemen and wipers	273,171 03	305,988 40
Train and station supplies	102,810 25	123,712 80
Fuel consumed	566,520 99	660,675 60
Oil and waste	65,378 72	69,599 57
Personal injuries	30,277 02	5,800 63
Damage to property	26,580 66	23,949 87
Loss and damage of freight and baggage	6,558 63	8,219 08
Legal expenses	18,053 47	20,614 02
New York office expenses	12,118 57	9,758 70
Taxes	174,300 56	200,333 67
Insurance	25,851 43	26,092 78
Miscellaneous	8,391 24	17,431 76
Expenses (extraordinary)—		
Renewal of track	270,583 10	364,541 06
New bridges	34,104 36	42,819 82
New buildings		32,596 08
New fences	25,254 23	80,828 56
New locomotives		17,222 50
New cars	148,809 56	
New tools and machinery	10,546 72	10,554 99
United States Government taxes	50,191 29	38,651 78
Rebuilding locomotives	17,573 33	5,775 86
Mississippi Ferry	126,195 68	38,444 32
Stock yard expenses	1,340 37	3,972 48
Total	$4,229,882 11	$4,653,274 29
Gross earnings	$7,250,693 68	$7,421,061 43
Operating expenses	4,229,882 11	4,653,272 29
Net revenue	$3,020,786 57	$2,667,787 14

The gross earnings of 1870, as compared with those of the previous year, show an increase of $170,392.75, and the expenses an increase of $423,392 18. The net revenue shows a decrease of $252,999.43. The percentage of expenses in 1869 was 58, and in 1870, 63 per cent. Expenses are divided as follows:

	Ordinary.	*Extraordinary.*	*Total.*
1869	$3,545,243 47	$648,638 64	$4,229,882 11
1870	4,017,826 44	635,447 85	4,653,247 28
Increase	$ 472,582 97		$ 424,392 19
Decrease		$ 49,190 79	

The earnings and expenses by operating divisions for the two years, were as follows:

Gross earnings:	1869.	1870.
LaCrosse Division	$2,331,694 64	$2,188,379 99
Northern Division	718,424 39	703,773 76
Prarie du Chien Division	2,513,193 70	2,477,226 93
Iowa & Minnesota Division	1,686,848 95	1,957,780 75
Expenses:		
LaCrosse Division	1,357,103 70	1,330,519 59
Northern Division	388,579 33	430,843 78
Prarie du Chien Division	1,415,915 07	1,487,220 49
Iowa & Minnesota Division	1,068,274 01	1,354,090 86
Net revenues:		
LaCrosse Division	974,591 94	857,760 40
Northern Division	329,845 06	366,930 38
Prairie du Chein Division	1,097,775 63	980,406 44
Iowa & Minnesota Division	618,574 94	603,689 92

The earnings, expenses and net revenues per mile of road in the two years compare as follows:

	1869.	1870.	*Decrease.*
Gross earnings	$8,450 66	$7,674 32	$776 34
Operating expenses	4,929 93	4,812 08	117 85
Net revenues	3,520 73	2,862 24	658 49

This difference is explained by the large accessions of new and comparatively unproductive track brought into operation in 1870.

The expenditures of the company during 1870, not charged to operating account, amounted to $766,729, as follows:

Second mortgage bonds—sinking fund	$72,000
Freight cars, 200; passenger, 6 and baggage 4	175,065
Locomotives, 10	126,450
Purchase of Prairie du Chien ferry	71,881
New buildings, turntables, etc., in Iowa	84,182
New buildings at La Crosse	73,172
New buildings at other points on the Mississippi	25,000
New freight house at Milwaukee	22,613
Depot grounds at Milwaukee and stock yards	27,589
Draw bridge at Milwaukee	4,793
Docks and canals at Milwaukee	15,222
Railway around Milwaukee	12,436
St. Paul Branch (construction)	17,465
Right of way on all lines	15,113
Engineers bill on other lines	4,198
Winter bridge at Prairie du Chien, etc	15,850

With the reduction which has taken place in the cost of labor and in many kinds of supplies, together with the strict economy thoroughly enforced in all the departments, the directors have confidence that the business of 1871 will exhibit results that will be satisfactory to the stockholders.

The stockholders having authorized the same, the directors declared a dividend from the earnings of 1869, payable February 15, 1870, upon the preferred stock, of $7 per share in cash and $3 per share in common stock; and upon the common stock payable at the same time $3 per share in cash and $7 per share in common stock. The dividends so declared increased the common stock from that date $828,900.

With like authority from the stockholders, the directors declared a dividend from the earnings of 1870, payable December 31, 1870, of $7 per share in cash upon the preferred stock, and $7 per share in common stock upon the common stock. This latter dividend increased the common stock $747,291.

GENERAL ACCOUNT, DECEMBER 31, 1870.

Cost of road and equipment	$38,623,679 90
Western Union Railroad stock (20,010 shares)	1,500,750 00
Materials on hand	317,033 41
U. S. Government P. O. Department	31,721 76
Balances due from agents and other companies	264,624 07
Miscellaneous accounts	41,303 96
City of Hastings bonds	14,000 00
Interest paid on bonds due Jan. 1, 1871	477 75
Cash on hand	431,094 68
	$41,214,689 53
Capital stock ($21,847,981), viz:	
Capital stock, preferred	$10,425,103 00
" " common	11,422,878 00
Funded debt ($18,205,573), viz:	
1st mortgage 7s	$5,488,000 00
" 8s, E. Division (Palmer)	702,000 00
" 7s, Iowa & Minnesota Division	3,702,000 00
" 7s, Minnesota Central Railroad	208,000 00
" 7s, Iowa & Dakota Division	1,008,000 00
" 8s, Prairie du Chien Division	3,674,000 00
2d mortgage 7.30s	1,315,000 00
" 7s	1,244,000 00
Income 7s	20,000 00
Milwaukee City 7s	234,000 00
Milwaukee & Western Railroad 7s	158,500 00
Real estate 7s	247,000 00
Incumbrances assumed	35,073 00
Accounts ($1,161,135.53), viz:	
Unpaid pay rolls and bills	$382,823 75
Due other roads	93,164 76
Miscellaneous	114,823 10
Milwaukee Iron Company	16,237 11
Reserved Government tax	43,747 62
Dividends unpaid	152,463 19
Coupon account	265,090 74
	$14,214 689 53

That the stockholders may know the exact present (March 1, 1871) condition of the company, a statement of the bonds and stocks outstanding at date is presented, and the directors promise that no more bonds or stocks will be issued during 1871. The cost of the Milwaukee & St. Paul Railway (March 1, 1871,) is represented by capital as follows—

Mortgage bonds	$18,183,500
Preferred stock	10,845,103
Common Stock	11,822,878
	$40,851,481
Deduct Western Union Railroad stock	1,500,750
Cost of 1,018 miles ($38,650 per mile)	$39,330,731

The increase since the statement of Dec. 31, 1869, has been—bonds, $1,028,659; preferred stock, $1,080,835, and common stock, $4,157,774; total increase, $6,267,168.

This increase has been made for the following purposes:

Bonds for purchase of railroad in Iowa (Nora Springs to Algona) 63 miles		$1,008,000
Preferred stock		2,088,835
Railroad 63 miles	$504,000	
Railroad (Austin to Iowa line) 11 miles	177,000	
Railroad (Mason City to main line) 29 miles	400,000	
Prairie du Chien Railroad stock	1,008,835	
Common Stock		$4,157,774
Railroad 63 miles	$504,000	
Railroad 11 miles	176,000	
Railroad 29 miles	400,000	
Western Union Railroad stock	1,500,750	
Prairie du Chien Railroad stock	833	
Dividend on earnings of 1869	828 90	
" " " 1870	747,291	
Total increase Dec. 31, 1869, to March 1, 1871		$6,246,609

WESTERN UNION RAILROAD.

As before stated the Milwaukee & St. Paul Company have acquired a controlling influence in the Western Union Company by the purchase of a majority of that company's stock. This railroad extends from Racine, on Lake Michigan, to Savannah and Port Byron, on the Mississippi, a distance of 180 miles, and is continued by a 10 mile branch of the Chicago, Rock Island & Pacific Railroad, leased by the Western Union Company, to Rock Island and Davenport. The company also built last year a branch from Eagle to Elkhorn, 15½ miles (opened in October), acquiring thereby a direct Milwaukee connection.

The equipment of the Western Union Railroad consists of 27 locomotives, 12 first-class passenger cars, 14 second-class passenger cars, 4 mail and express cars, 9 baggage cars, 434 box freight cars, and 67 flat freight cars. Total cars, 530.

The operations on the road for the years 1869 and 1870, compare as follows:

	1869.	1870.
Passengers' carried	231,662	200,800
Freight (tons) moved	180,787	203,328
Gross earnings	$769,7.2 83	$766,937 85
Operating expenses	727,868 68	617,982 51
Net revenue	$41,844 15	$148,955 34

The following shows the gross earnings of the road for a series of six years:

1865	$6 8,347	1868	$758,685
1866	715,954	1869	769,713
1867	765,. 75	1070	766,937

The cost of the property represented by stocks and bonds is as follows:

Mortgage bonds	$3,275,000
Capital stock	4,000,000
Cost of road (say $37,000 per mile)	$7,275,000

Three million dollars of the mortgage debt bears only 3 per cent. interest until July 1, 1873.

The officers of the company are as follows:

Directors—Alexander Mitchell, Milwaukee; Russell Sage, Fred. P. James, N. A. Cowdrey, Walter S. Gurnee, New York; Selah Chamberlain, St. Paul, Minn.; S. S. Merrill, Milwaukee; Julius Wadsworth, James Buell, James G. Garner, Levi P. Morton, F. de Billier and Isaac Sherman, New York.

Alexander Mitchell, President; Russell Sage, Vice-President; R. D. Jennings, Milwaukee, Secretary and Treasurer; James M. McKinlay, New York, Assistant Secretary and Transfer Agent; S. S. Merrill, Milwaukee, General Manager; J. P. Whalen, Milwaukee, Auditor; Robert Wason, Jr., Milwaukee, Purchasing Agent.

New York & New Haven Railroad Report.

The New York & New Haven Railroad extends from a junction with the New York & Harlem Railroad at Williamsbridge, 14¼ miles from New York, eastward along Long Island Sound to New Haven, 62½ miles.

The income of this company for the years ending March 31, 1870 and 1871, was as follows:

	1870.	1871.
From passengers	$1,715,544 40	$1,750,641 42
From freight	415,059 56	433,346 63
From mails and express	107,691 61	107,623 34
From other sources	23,671 21	17,338 60
	$2,261,966 81	$2,313,949 99
Expenses, viz:		
Repairs of road	$291,468 63	$316,648 75
" bridges	34,049 84	27,993 57
" buildings	30,831 10	60,605 40
" engines	65,209 10	65,133 21
" cars	113,209 55	130,188 79
" tools, etc	12,006 83	6,703 50
Fuel	127,487 93	113,371 52
Oil, tallow and waste	24,919 34	21,631 78
Haulage	81,701 30	87,168 35
Legal expenses	15,794 84	17,489 73
Damages	10,811 35	8,287 15
Station labor and expenses, including loading and unloading freight	100,955 34	105,861 31
General superintendence and office expenses	27,979 83	20,145 51
General expenses	53,744 30	24,976 06
Agents and clerks	53,023 51	53,151 60
Train men	139,888 47	136,323 60
Switch and signal men	15,798 02	18,448 33
Watchmen and porters	19,678 87	19,659 70
Insurance	4,888 08	3 844 83
Contingent expenses	5,861 41	13,277 65
	$1,219,397 35	$1,250,608 37
Balance	1,042,659 46	1,063,341 62
Deduct taxes and interest		237,432 36
Leaving		$825,909 20

There were during the year two five per cent. dividends, and $1,211,705.78 was expended on account of new capital.

From the foregoing account it will be seen that the gross receipts from the transportation business of the company for the past year have been $51,983.18, and the net earnings, after paying taxes, interest, etc., $62,609.10 more than for the year preceding. The road has been operated with the usual regularity and freedom from accidents. The improvements inaugurated three years ago have been carried steadily forward. About two-thirds of the road is now relaid with solid steel rails; the remaining part will be completed by the close of the year 1872. New double-track iron bridges are now in process of construction across Norwalk harbor, and Housatonic River, and will be completed during the present year. The entire cost of the steel rails laid during the past year, as well as the expenditures for additional equipment and many other improvements, have been charged to operating expenses.

Since the last annual report a contract has been entered into between this company and the Hartford & New Haven Railroad Company, by which all the property of both companies has become joint property, under the control and management of a board of ten managers, selected equally from the Board of Directors of each corporation. This Board of Managers was organized on the 27th day of September, 1870, and William D. Bishop was appointed President, and Wm. P. Burrall, Vice-President of the same. Under the above contract, this company is entitled to receive annually, 57-100 of the net earnings of both roads, and the remaining 43-100 will belong to the Hartford & New Haven Railroad Company. Each company's share of the net earnings will be paid over from time to time, to their Treasurer, to be divided among their stockholders, or otherwise disposed of, as may be determined by their Board of Directors.

Your Directors are satisfied that this contract for the complete union of property and interests will prove advantageous to the stockholders of both companies, as well as to the general public.

On the first of November last, your Board of Directors, under and pursuant to a written request of the Board of Managers, and for their account, entered into a contract with the Shore Line Railway for a perpetual lease of their railroad, extending from New Haven to New London, at an annual rent of $100,000. The result of the operation of said road during the first five months of the lease will be seen from the statement accompanying this report.

It is not probable that the earnings of the Shore Line road for the first two or three years of the lease will be sufficient to pay the annual rent, as considerable outlays must be made in rebuilding bridges, and improving the roadway and equipment. The Board of Managers will cause this road to be gradually relaid with steel rails and placed in all respects in a condition to compare favorably with the main lines, with the full expectation that the increased facilities and additional improvements will add materially to the business of the road.

Hereafter, the annual report to the stockholders of this company will be a report of the business of the entire lines subject to the control of the Board of Managers. The propriety of this is manifest, in view of the contract with the Hartford & New Haven Railroad Company.

The company have 36 engines, of which 29 are in good order, 4 in running order, and 3 in shop for general repairs. The number of miles run by engines has been 824,968, at a cost for repairs of 7.8 cents per mile run—which also includes the cost of rebuilding one engine (all new)—and 12 cents per mile run for fuel. Two new engines are now being constructed at the Rogers Locomotive Works, Paterson, N. J., which are to be delivered this month. These, and the amount expended upon the repairs of engines during the year, places the engine power in excellent condition for the business of the coming season.

The company have also 74 passenger, 17 baggage, 426 freight, and 30 gravel cars, besides 74-234ths of 49 passenger cars, of which 10 are sleeping, and 9 are drawing-room cars, 12 baggage, 4 express freight, and 3 postal cars, belonging to the New York & Boston Express Line; and 74-232ds of 4 passenger and 2 baggage cars, belonging to the New York & Boston Shore Line, which are all in excellent condition.

The amount of this company's proportion of 6 passenger, 4 drawing-room, 2 baggage, and three sleeping cars (all new) belonging to the New York and Boston Express Line, and the cost of building 3 passenger and 30 gravel cars has been charged in the item of "Car Repairs," which accounts for the increased amount of the same.

There have passed over the road during the year 9,492 passenger, and 2,504 freight trains exclusive of gravel and construction trains. The number of passengers transported during the same time is 2,551,656, and during the past fifteen years, ending March 31, 1871, 23,587,002 passengers have been transported over the New York & New Haven Railroad, without any accident to any train, while on that road, that caused the loss of a single life, or limb, to any passenger so transported.

CONDENSED BALANCE SHEET.

Railroad, including the franchise, right of way, grading, masonry, bridging, fencing, superstructure, iron, station houses, shops, fixtures, machinery, engineering, interest, discount on bonds, etc.		$6,143,480 04
Equipment, engines, cars, etc.		900,000 00
Real estate in New York and New Hampshire		107,745 66
Due from Wm. Bement		88,291 68
Permanent improvements and additions		1,211,705 78
Material and supplies on hand		217,549 00
Cash in bank, due from agents, connecting roads and corporations		1,159,405 76
		$9,828,177 92
Capital stock, 60,000 shares full paid	$7,500,000 00	
Capital stock, 30,000 shares 50 per cent. paid		
Bonds payable December 1, 1866, past due	2,000 00	
Bonds payable October 1, 1875, six per cent., coupons due on 1st April and 1st October	1,059,500 00	
Coupon interest and dividends unpaid	33,040 00	
Accounts payable, March pay roll and balances due connecting roads	196,624 78	
Profit and loss	1,037,013 14	
	$9,828,177 92	

The cost of the road represented by the stock and bonds, is about $135,000 per mile.

The officers of the company are as follows: Directors—Wm. D. Bishop, Bridgeport; George B. Carhart, George N. Miller, Abraham R. Van Nest, James J. Roosevelt, Wilson G. Hunt, New York; Ezekiel H. Trowbridge, New Haven; Jonathan Godfrey, Southport; Nathan A. Baldwin, Milford; Nathaniel Wheeler, Bridgeport. President, Wm. D. Bishop; Treasurer, John T. Shelton; Secretary, Edward I. Sanford; Superintendent, James H. Hoyt.

General Railroad News.

CHICAGO RAILROAD NEWS.

Chicago, Rock Island & Pacific.

At the annual election of this company held in this city on the 7th inst., the entire old board was re-elected, and Mr. Harvey Kennedy, of New York, a member of the Northwestern Board, was chosen in place of John Hearn, of Erie, Pa., deceased. The officers were all re-elected. One hundred and thirty thousand two hundred and seventy shares were represented at the election.

The report read at the annual meeting gave the following as the receipts and expenditures for the year ending March 31, 1871:

Gross earnings	$6,028,287 29
Operating expenses and taxes	3,405,459 06
Net receipts	$2,622,828 23
Rent on Peoria & Bureau Valley Railroad	$125,000 00
Interest on bonds	617,751 75
Dividend, including taxes	1,229 466 00
Total	$1,972 217 75
Surplus	$650,610 48

It will be interesting to compare this with the statement for the previous year, which was as follows:

Gross receipts	$5,995,366 20
Expenditures	3,456,,91 24
Net earnings	$2,538,474 96
Interest on bonds, dividends and Peoria & Bureau Valley rental	$2,066,951 57
Surplus	$471,532 39

This shows an increase of a little more than one-half of one per cent. in earnings, a decrease of 1½ per cent. in expenses, and an increase of $84,353.27, or about 3⅕ per cent., in net earnings.

Pullman Palace Car Company.

Since the resignation of Mr. Pierson, presented some time since, the office of Vice-President of this company has had no incumbent, and the continual extensions of the company's lines, and consequent necessary additions to the capital—now about eight millions—have rendered it necessary to fill this office and also to make further divisions of labor in the management. Col. C. G. Hammond, late Superintendent of the Union Pacific Railroad, has been made 1st Vice-President. His headquarters will be in Chicago, and his duties will involve general charge of the company's affairs, and the representation of the President in his absence.

Mr. A. B. Pullman, the new 2d Vice-President, will have especial charge of the construction and equipment of cars, and of such improvements as may be developed.

The General Superintendent is Mr. Marvin Hughitt, lately General Superintendent of the Illinois Central Railroad. To him will belong the entire charge of the operating department and maintenance of the rolling stock.

Chicago & Alton.

The earnings continue to show a marked increase. In May, 1870, they were $408,685 64; in May, 1871, $465,780.44; an increase of $57,094.80, or about 14 per cent.

Chicago & Northwestern.

The company has made a contract with the State Line & Union Railroad Company for extending the Fox River Valley road in Wisconsin from the State line, near Genoa, northwest about 9 miles to Geneva, on Lake Geneva, the happy fishing waters of Wisconsin. This part of the road is to be completed by the 25th of July, and 8 miles more, to Elkhorn, Wis., is to be finished as fast as possible afterward. Connections are to be secured to Chicago at Crystal Lake over the Wisconsin Division. Geneva is one of the most attractive spots in the northwest, and, even in its present isolated condition, it is the residence of many wealthy people. With a railroad to Chicago it ought to become a great summer resort.

Preliminary surveys have been made for a road from Geneva, Ill., to Batavia, down the west bank of Fox River. The stone quarries, carriage factory and paper mill along the river offer inducements for building the road to secure their freight business. It will be nearly parallel with but much nearer the river than the new line of the Chicago, Burlington & Quincy, and will have its station in the town and not at one side, as are both the present stations.

Mr. Dunlap, Mr. Porter and others of the directors were at Green Bay last week to arrange for building the Bay Shore Extension from Fort Howard to Menominee. The contract for construction has been closed and the grading is to begin at once.

ELECTIONS AND APPOINTMENTS.

—The Pullman Palace Car Company announces the following appointments, which took effect June 5: C. G. Hammond, late General Superintendent of the Union Pacific Railroad, and formerly General Superintendent of the Chicago, Burlington & Quincy, is made First Vice-President; A. B. Pullman, late General Superintendent, becomes Second Vice-President; Marvin Hughitt, until March last General Superintendent of the Illinois Central and since Assistant General Manager of the Milwaukee & St. Paul, is appointed General Superintendent.

—The stockholders of the Springfield & Northwestern Railroad Company held a meeting in Springfield, Ill., on the 6th inst. The following directors were elected: John Williams, Charles W. Matheny, Sangammon County; W. J. Estel, R. J. Waldridge, Menard County; Hugh Fullerton, R. S. Moore, Mason County; L. W. Ross, J. J. Wagoner, S. P. Shape, Fulton County.

—J. F. Gatewood, R. W. Martin, L. C. Gause, R. S. Gantt, O. S. Dillon, E. M. Phillips and J. McL. Barton, have been elected directors of the White River Valley & Texas Railroad.

—A telegram from Springfield, Ill., reports it as "quite certain" that Governor Palmer will appoint Lieut. Gov. Gustavus A. Kœrner, of Belleville; Col. Richard P. Morgan, Jr., of Bloomington, and S. H. McCrea, of Chicago, as Railroad and Warehouse Commissioners. Governor Kœrner is a lawyer and politician (a respectable one); Colonel Morgan, a civil engineer, and Mr. McCrea, a grain merchant. None of them, we believe, has experience in *operati g* railroads.

—The annual meeting of the grantees of the proposed New Hampshire Central Railroad from Freedom, on the Maine line, to Danbury, on the Northern Railroad, by way of Ossipee, Moltonborough, Center Harbor and Bristol, being a connecting link of the proposed route from Portland to Oswego, New York, was held on the 30th, at Meredith Village. The following directors were chosen: Oscar F. Fowler, William Dyer, W. H. Mason, William Weed, Larkin D. Mason, Henry J. Banks. Hon. O. F. Fowler, of Bristol, was chosen President; Cyrus Taylor, of Bristol, Treasurer, and George T. Crawford, Clerk.

—It is reported that James Y. Randolph, now Chief Engineer of the Baltimore & Ohio Railroad Company, has been appointed Chief Engineer of the Southern Pacific Railroad.

—By a Cincinnati dispatch of the 1st inst. we learn that the stockholders of the Kentucky & Great Eastern Railroad have organized by electing the following directors: W. P. Cutler, Gen. John C. Fremont, New York; James T. Brady, Pennsylvania; Gen. N. P. Banks, Massachusetts; Col. S W. Morton, Kentucky; A. J. Hodder, Ohio; Dr. John M. Dukē, Kentucky. At a meeting of the board Col. Morton was elected President; Jas. T. Brady, of Pittsburgh, Treasurer, and T. W. Wrightson, Secretary.

—Mr. G. A. Washington, President and Receiver of the Edgefield & Kentucky Railroad, issues a circular announcing that J. M. Speer has been appointed Superintendent, in place of M. L. Blanton, resigned; and that W. H. Hart has been appointed Treasurer and General Ticket Agent, in place of B. F. Champ, resigned. The general offices are at Nashville, Tenn.

—Mr. J. L. Hinckley on the 1st of June assumed the duties of Superintendent of the St. Louis Division of the North Missouri Railroad in addition to those of Assistant General Superintendent, in place of Mr. C. L. Dunham, resigned.

—Mr. Miller Bullard, late Train Dispatcher of the St. Louis Division of the Indianapolis & St. Louis Railroad, has been appointed Superintendent of Telegraph and Train Dispatcher of the Atlantic & Pacific Railroad, in place of George H. Crain, resigned.

—Mr. P. H. Ainsworth, late Division Engineer on the Davenport & St. Paul Railroad, has been appointed an engineer on the government railroad of Peru, South America, which Henry Meigs, of San Francisco, is constructing. Mr. Ainsworth will sail for Lima on the 30th inst. He is accompanied by two railroad men from Iowa, who have engagements in Peru.

—Dudley S. Gregory and Isaac W. Scudder, of Jersey City; Henry R. Remsen, Hamilton Fish and Ferdinand Suydam, of New York; George R. Chetwood, of Elizabeth, N. J.; Alfred L. Dennis and Nehemiah Perry, of Newark, N. J., and Martin A. Howell, of New Brunswick, N. J., were re-elected directors of the New Jersey Railroad & Transportation Company on the 7th inst.

—Under the provisions of the act of the Twenty-sixth General Assembly of Illinois, in force April 16, 1869, Governor Palmer on the 7th inst. appointed the following gentlemen directors of the following named railroad companies, viz.: For the Plymouth, Kankakee & Pacific Railroad Company, Jael W. Hopkins and Ralph Plumb; for the Fairbury, Pontiac & Northwestern Railroad Company, E. A. Sweet and Chester R. Manley; for the Illinois Farmers' Railroad Company, James B. Sterdley; for the Springfield & Northwestern Railroad Company, David J. Waggoner, W. R. Waldridge and Henry Converse; for the Pekin, Lincoln & Decatur Railroad Company, D. C. Smith; for the Chester & Tamaroa Coal Railroad Company, T. M. Sams and James Ritchie.

—At the annual election of the New York Central & Hudson River Railroad Company, held in New York on the 7th inst., Cornelius Vanderbilt, Augustus Schell, Charles R. Marvin, H. H. Baxter, William H. Vanderbilt, Horace F. Clark, James H. Banker, William A. Kissam, Joseph Harker, Samuel F. Barger and Samuel Barton, of New York; Chester W. Chapin, of Springfield, Mass., and George J. Whitney, of Rochester, N. Y., were re-elected directors. According to the telegraphic report, 350,000 of the 900,000 shares voted.

—At the annual election of the Chicago, Rock Island & Pacific Railroad, held in Chicago on the 7th inst., the following were chosen directors: David Dows, Francis H. Tows, A. G. Dulman, Charles R. Marvin and Harvey Kennedy, of New York; Robert A. Forsyth, of Newburg, N. Y.; Milton Courtright and William L. Scott, of Erie, Pa.; John F. Tracy and Henry H. Porter, of Chicago; Ebenezer Cook and George L. Davenport, of Davenport, Iowa, and B. F. Allen, of Des Moines, Iowa. All these are re-elected except Mr. Kennedy, who takes the place of John Hearn, of Erie, deceased. Ten of this board, Messrs. Dows, Tows, Dulman, Marvin, Courtright, Scott, Tracy, Porter, Allen and Kennedy are members of the Chicago & Northwestern Board.

All of last year's officers were re elected, viz.: John F. Tracy, President; Ebenezer Cook, Vice-President; Francis H. Tows, Secretary and Treasurer; F. D. Sherman, Assistant Treasurer. John F. Tracy, David Dows, Ebenezer Cook, William L. Scott, and B. F. Allen form the Executive Committee.

—Captain Samuel S. Entrikin has received the appointment of Contracting Agent of the North Missouri Railroad, with office at the corner of Second and Olive streets, St. Louis.

—At he annual meeting of the stockholders of the Sioux City & St. Paul Railroad Company, held at Sioux City, Iowa, on the 1st day of May last, the following named persons were elected directors: Horace Thompson, A. H. Wilder, E. F. Drake, St. Paul; S T. Davis, Sioux City, Iowa; George J. Seney, Adrian Iselin, Daniel S. Miller, New York; Alex. H. Rice, George H. Mackay, Boston.

—The incorporators of the Poughkeepsie Bridge Company have elected the following officers: President, John F. Winslow; Vice-President, H. G. Eastman; Treasurer, George Innis; Secretary, R. F. Wilkinson. P. P. Dickinson, of Poughkeepsie, is Chief Engineer.

—John A. Spaulding, of Nashua; William R. Spalding, of Lawrence; Edson Hill, of Manchester; James W. Johnson, of Enfield; John H. Pearson, of Concord; Frederick Smyth, of Manchester, and William A. Tower, of Boston, have been elected directors of the Concord Railway Company.

—At the annual meeting of the Maysville & Lexington Railroad Company, held at Maysville, Ky., on the 18th ult., the following gentlemen were elected directors for the ensuing year: Thompson Parks, Daniel Hibler, Alex McClintock, Jas. H. Hall, L. H. Long, W. H. Cox, and Jno. S. Darnall.

—The Syracuse (N. Y.) *Courier* announces that Mr. Charles A. Sweet, Assistant Engineer of the Middle Division of the Erie Canal, has just received an appointment from the Government of Peru, as Division Engineer in the construction of a railroad in that country, at a large salary. The road—which is already built from Lima a distance of twenty-five miles in the direction of Callao—is to extend over the Andes, the whole length being 120 miles. The summit of the road will be 14,000 fe t above the level of the sea.

PERSONAL.

—Newspapers in various parts of Ohio—Columbus, Zanesville, Mount Vernon and elsewhere—contain articles nominating Mr. John W. Garrett. President of the Baltimore & Ohio Railroad, as the Democratic candidate for President in 1872.

—Gen. T. J. Rodman, of the United States Army, commandant at the government works at Rock Island, and an engineer of great ability, died at that post on June 7th

TRAFFIC AND EARNINGS.

—The Great Western Railway, of Canada, reports as follows its receipts for the week ending May 12, 1871:

Passengers	$26,135 87
Freight and Live Stock	48,459 93
Mails and Sundries	2,992 65
Total Receipts for week	$77,586 45
Corresponding week, 1870	74,996 49
Increase	$ 2,589 96

—A telegram from Washington dated the 4th inst. says: "J. T. Whiting, General Western Agent of the Union Steamboat Company, was at the Treasury Department yesterday, making inquiries about bonding all the vessels belonging to that company to carry dutyable goods from Buffalo to Duluth. It appears that with the opening of spring navigation this year there has been a remarkable emigration from Eastern Canada to the Red River country, and Buffalo has been fixed upon as the eastern shipping point to accommodate this class of travel and the commerce naturally arising therefrom. The western terminus of the route will be Duluth, and thence to Pembina. Goods will be transported by rail or such other modes of conveyance as may be agreed upon. This hegira is entirely unaccounted for, and causes much surprise at the Treasury Department. The emigrants are mostly French and Irish."

—The Milwaukee & St. Paul Railway Company, now working 1,018 miles of road, earned:

In 1870	$7,421,061
In 1869	7,250,688
Increase	$170 373
EXPENSES.	
1870	$4,053,274
1869	4,299,882
Increase	$353,392

The milage worked in 1869 averaged 858; in 1870, 950. The cost of the 1,018 miles of the company's road, as represented by stock and bonds, amounts to $39,330,731, or $38,650 per mile.

OLD AND NEW ROADS.

Washington & Ohio.

This company has advertised for proposals to be received until the 15th inst., for the graduation, masonry, and bridging the road from Hamilton, its present Western terminus, to Winchester, a distance of thirty-one miles, the whole to be completed by May of next year.

Quincy & Mt. Carmel.

The officers of the company are busy securing stock subscriptions for this road, which it is proposed to build from Quincy, through Pittsfield, Whitehall, Carlinville, Hillsboro and Vandalia, to Mt. Carmel, on the Wabash River.

Cedar Rapids, McGregor & Milwaukee.

Mr. P. T. Randall, with a party of engineers, commenced the survey of this proposed Iowa line from Cedar Rapids northeastward, to pass through or near Center Point, Independence, West Union and Pottsville.

Freight Rates.

Freight rates from New York to Chicago, after having been lowered by successive "cuttings," within the past few weeks, from $1.00 to 75 cents, have again been "fixed" at $1.00. For the different classes of freight the rates are, $1.00, 90c., 70c., 55c. and 45c.

From New York to Detroit the rates are 71c., 64c., 50c., 39c., and 32c. To Toledo: 78c., 70c., 54c., 42c. and 35c. To Cleveland: 56c., 59c., 46c., 36c. and 30c.

Between Chicago and St. Paul, the usual summer reduction in rates have been made. The rates have been: $1.10, $1.00, 85c., 60c. and 50c. They are now: 85c., 75c., 50c., 35c. and 30c.

New Jersey West Line.

A telegraph from Newark, N. J., dated the 7th inst., says: "Hon. Asa Packer, of Pennsylvania, was present to-day at the meeting of stockholders of the West Jersey Line Railroad, and signed an agreement to take charge of the road and complete it within eighteen months, and assume the indebtedness. He was then chosen President of the Board of Directors, with Robert H. Sayre, of the Lehigh Valley Railroad, as Vice-President, and others of the same road as directors." The road will extend from Jersey City a little south of west to the Delaware River at Milford, which is 16 miles—by the Belvidere & Delaware Railroad—below Easton, the eastern terminus of the Lehigh Valley road. The road was originally intended to connect with the East Pennsylvania Railroad.

Elizabethtown & Paducah.

Mr. Geo. McLeod, Chief Engineer, asks, in our advertising columns this week for proposals for grading, bridging, masonry and trestle-work on the thirty-two miles of the road; also for cross-ties for seventy miles. The work is situated in Hopkins, Lyon, Marshall, and McCracken counties, Ky., and is estimated to cost about $300,000. The address is at Louisville, Ky.

California Excursion.

The agent of the San Diego Land Association, in this city, has projected another excursion to leave here to-day in Pullman cars for San Diego, by way of the Rock Island and Pacific roads and San Francisco. The return tickets will be good for 90 days.

Davenport & St. Paul.

The portion of this road in operation from Davenport to St. Paul, with the exception of a few miles nearest Davenport will be a branch of the main line, which will extend northwestward from Davenport, crossing the Northwestern at Wheatland, the Dubuque Southwestern at Monticello, the Dubuque & Sioux City near Delaware, the Iowa Dakota Division of the Milwaukee & St. Paul, about 16 miles west of Colmar, the Iowa & Minnesota Division of the same road at Cresco, beyond which it is not yet located. From the junction with the completed road, about five miles north of Davenport, to Wyoming, 40 miles, the grading is nearly completed, a large part of the work is done for thirty miles more, and beyond work is begun, and the whole line as for as located is under contract. The road will be nearly parallel with the Burlington, Cedar Rapids & Minnesota road and from 30 to 50 miles northeast of it.

Utah Southern.

The first spike on this road (a southward extension of the line from Ogden to Salt Lake City) was driven by Brigham Young on the 6th inst.

Des Moines, Winterset & Southwestern.

It is reported that this company will let their contracts at once, and have the line completed by the end of the year.

Atchinson, Topeka & Santa Fe.

The Atchinson, Topeka & Santa Fe Railroad Company is running trains on its roads as far south as Florence, Kansas, 107 miles southwest from Topeka, Kansas. Thirty miles beyond Florence are under contract to Newton; tracklaying on this contract was commenced on the 29th May. The company also has under contract 43 miles of work northeast from Topeka toward Atchinson *via.* Grasshopper Falls. It is proposed to complete the road to Atchison, a distance of 50 miles, this season. This company is building a first-class road. With the exception of trestle approaches to the Kaw River Bridge, at Topeka, no trestle has been used thus far in construction. Substantial winged or T abutments are placed in all situations where culverts give too small drainage.

The number of stations on the 107 miles in operation is twenty-one, among the most important of which are Carbondale, 18 miles from Topeka; Burlingame, 23 miles; Osage City, 35 miles; Emporia, 62 miles; Cottonwood Falls, 81 miles, and Florence, 107 miles.

At Carbondale the company has 1½ miles of side track to accommodate the coal trade. The coal vein here is from 18 to 36 inches thick, and coal is delivered on the cars for 10 to 12 cents per bushel. Coal shafts are also worked in the same stratum of coal at Burlingame.

Burlingame and Emporia are county towns. Newton is at the intersection of the Texas cattle trail, and the sixth principal meridian of the Kansas land surveys, which is the eastern limit of the territory on which cattle can be taken on foot in Kansas.

The general offices and machine shops of the company are at Topeka. The stockholders and capitalists interested are Eastern men, mostly of Boston. At the annual meeting of the stockholders held in Topeka on the 25th of May, the following directors and officers were elected for the ensuing year: Directors—Ginery Twichell, E. Raymond, F. H. Peabody, Joseph Nickerson, Isaac T. Burr, of Boston, Mass.; George Opdyke, Henry Blood, of New York; Thomas Sherlock, of Cincinnati; T. J. Peter, D. L. Lakin, C. K. Holliday, of Topeka. Ginery Twichell, M. C., was elected President, Isaac T. Burr, Vice-President; C. W. Pierce, Secretary and Treasurer; T. J. Peter, General Manager; and D. L. Lakin, Land Commissioner.

Missouri, Kansas & Texas.

Trains are now running 33 miles into the Indian Territory. The "Overland Transit Company" has been engaged to do the through business. Mr. C. E. Maurice is General Superintendent; R. S. Stevens, General Manager; W. E. Graham, General Agent at St. Louis, and D. H. Mirrick, General Freight and Ticket Agent, at Sedalia.

Lafayette, Bloomington & Mississippi.

The Bloomington *Pantagraph* reports that a "contract has been entered into with the Toledo, Wabash & Western Company, to build this road by the first of January next from Bloomington to Paxton, and by the July following to the State line. Thence, instead of going to Lafayette direct, it is probable it will go to Attica, a point on the Toledo, Wabash & Western road, some 20 miles this side of Lafayette."

The truth is, that Snell, Taylor & Co., of Chicago, have taken a contract to lay the iron on this road from Lafayette to Bloomington, to be commenced very soon, and completed this year. They have also the contract for the road bed of the Lafayette, Bloomington & Muncie Railroad, which will be virtually an eastern extension of the Lafayette, Bloomington & Mississippi, and have commenced work at Tipton, on the Peru & Indianapolis Railroad, from which they will work in both directions. They have sub-let a large part of the work, and are now ready to sub-let about 50 miles more. Their office for this road is at Tipton, Ind.

It is also determined to extend the Lafayette, Bloomington & Mississippi this year westward to some point on the Illinois River. The route is not yet determined, but the track of the Jacksonville Division of the Chicago & Alton will be used for some distance from Bloomington—probably either to Delevan, San Jose or Mason City.

Burlington, Cedar Rapids & Minnesota.

The Marshalltown *Times* says the Liscomb Branch of this road is to be put under contract in a few weeks, and the grading is to be done this fall. Liscomb has voted a five per cent. tax, and Vienna, in Marshall County, has ordered an election for a similar purpose. Liscomb is a town on the Iowa Central, 12 miles north of Marshalltown, and 50 miles west of Vinton.

Mount Tom & Easthampton.

An exchange paper says: "The stockholders of the Connecticut River Railroad Company, at a meeting in Boston recently, unanimously authorized a contract with the Mount Tom & Easthampton Railroad Company for a lease of the road of the latter company, and, in order to secure the construction of said road, agree to guarantee the payment of dividends and interest on the stock and indebtedness of the Mount Tom Company at the rate of 7 per cent. per year, free of all taxes and assessments and expenses to the company or its stockholders, payable semi-annually, on the actual cost of the road not exceeding $100,000, it being a condition that the Connecticut River Company, whenever thereto duly authorized, and after one year, upon giving six months' notice, shall have the right to purchase the Mount Tom Company stock and indebtedness at par, and that the certificates of stock and other evidences of debt of said company shall be issued subject to such conditions."

Sioux City & St. Paul.

The grading, commenced April 15, has been completed to the crossing of the Des Moines River. The contractors are at work fifteen or twenty miles west of that point, with more than half that distance ready for the track. The company is now receiving iron for the first twenty-five miles from American manufacturers and track-laying has been commenced. The Mankato *Review* says: "By the time this distance is opened for business an additional section of twenty-five miles will be ready for the track, and is to be laid with English iron. The contract for grading to the Iowa line has been let to Allen & Day, and the probabilities are that work will be continued uninterruptedly until the connection is made through to Sioux City. The contractors are working between eight hundred and nine hundred men."

Western Maryland.

The *United States Railroad and Mining Register* says of this road:

"When first constructed it extended from the Relay House, on the Northern Central Railroad, seven miles from Baltimore, to Union Bridge, in the western part of Carroll County. The road was operated between these points for several years. The company is now pushing its line to Hagerstown westward, and building its own entrance into Baltimore. These extensions are advancing rapidly, and the road will soon be in running order from Baltimore to Hagerstown. It will be then still further extended to Williamsport on the Potomac, intersecting the Chesapeake & Ohio Canal. Their new entrance to Baltimore, while it gives the company the control of their own time-tables, saves five miles in distance.

"In connection with the Western Maryland extension, a branch will probably be built into the coal fields of Alleghany County. New York capitalists are largely interested in the mineral wealth of that district, and this branch will probably be one of the earliest railroad movements in Maryland during the next season."

The line is nearly parallel with, and only from 10 to 20 miles north of, the Baltimore & Ohio Railroad, and if continued from Hagerstown to the Cumberland coal mines, that extention will be still near the Baltimore & Ohio.

Des Moines & Indianola.

The Indianola (Iowa) *Journal* says it will take a month yet to get the Indianola end of the Des Moines & Indianola road ready for the iron, which will be put down as soon as the road-bed is finished. It was widely reported months ago that this road was completed.

Great Western.

This company has chartered the steamer Florence, to run as a ferry between Port Huron and Sarnia, and connect its Sarnia line with the Port Huron & Lake Michigan road, with which its relations are close.

In another column will be found the company's advertisement for proposals, for the construction of the section of the Canada Air Line between Canfield and Fort Erie.

Poughkeepsie & Eastern.

Twenty-one miles of the main line of this road, extending from Poughkeepsie to Stissing, was opened to freight and passenger traffic in December last, and the remaining distance of 24 miles—reaching to the Connecticut State Line, where it forms a connection with the Connecticut Western Railway—is now in process of graduation. Twenty-one hundred tons of rails have already been purchased, and it is the purpose of the directors to open the line to travel by January 1, 1872. The road thus far has cost, including grading, right of way, fencing, freight and passenger depots, three first-class engines, five passenger coaches and thirty freight cars, but $30,400 per mile.—*American Railroad Journal.*

Chicago & Southwestern.

The annual meeting of the stockholders of the company, for the election of directors, and for the transaction of such other business as may come before them, will be held at the office of the company, at the western terminus of its road, nearly opposite the city of Leavenworth, Kansas, on Wednesday, the 14th.

Northern Pacific.

From the *Times*, published at Kalama, Washington Territory, the Columbia River terminus of the Northern Pacific Railroad, we take the following:

"Last week the ship, 'Panama,' and bark, 'Rival,' arrived at this port from San Francisco, and discharged about a thousand tons of railroad iron, and a large amount of other construction material. There are eight cargoes of iron now on the way from New York that should be here in the course of a few weeks; three of these vessels left in December, and the others in January—they are loaded with three thousand tons of track-iron, besides other material and iron work for track-laying. The iron coming will be sufficient to lay forty miles of track, and a further amount of iron is reported to have been ordered.

"A contract has been let to Mr. Montgomery, late of Philadelphia, to grade, pile, etc., twenty-five miles of the track from this city toward Puget Sound, which is to be completed by the 14th of October next. There is very heavy grading and piling for the first two miles to Kalama Creek, and along the Columbia bottom till the line diverges northwardly through the Cowlitz region. Scrapers, carts, wheel-barrows, shovels, etc., are all in use by gangs both of whites and Chinese, hurrying to get the Columbia section of the line finished in advance of the inevitable flood, which is expected to be unusually high this year. There is a large amount of work yet to be done this side of Kalama, as well as beyond, and it is apprehended the water may catch this part in an unfinished condition.

"Scows have been prepared for pile-driving when the river shall overflow the track.

"The wages paid for unskilled white labor on the grade is $2 per day in currency, the laborer boarding himself; menchanics from $2,50 to $3 per day; foremen of gangs about $70 per month, currency.

"Extensive coal-beds have been found on the line of the road, which have been purchased by the company, and it is calculated to go extensively into shipments of the same to the Columbia, so soon as the first forty or fifty miles of the road are completed."

Chicago & Canada Southern.

This company has filed articles of association in the office of the Secretary of State, of Indiana. The eastern terminus in Indiana is in Richland Township, Steuben County, in the northeast corner of the State. The western terminus is in Worth Township, Lake County, in the northwest corner of the State. The length is 144 miles, and the capital stock is $1,500,000. The Directors are: Chester Warren, Chicago; Fred. H. May, Chicago; Ransom Gardner, Kalamazoo; Milton Courtright, Erie, Pa.; E. W. H. Ellis, Goshen, Ind.; C. W. Calkins, Kalamazoo. The stock subscribed is $52,600.

This company, we understand, intends first of all to make its roads with the lowest grades possible, in order to form an economical line for freight transportation. It is said that on the entire line between Chicago and Buffalo, 500 miles, there will be no grade of more than 14 feet per mile.

Southern Express Company.

It is announced that, on the 18th of June, the company will begin running a daily express over the Memphis & Little Rock Railroad; and that expresses will also be run on the Davis line of steamers from Memphis to and from all points above Duvall's Bluff, on White River and tributaries, including Jacksonport, Batesville, Pocahontas, Searcy, Des Arc, West Point, etc.

Cedar Rapids & St. Louis.

The Burlington *Hawkeye* says: "There are indications that the work on the extension of the North Missouri road from Ottumwa to Sigourney, which has been suspended for some time, will be resumed. The company (Cedar Rapids & St. Louis) have commenced condemning land for the right of way, and the contractors, Messrs. Wolf & Carpenter, are preparing to put on a strong force of laborers."

Morrison's Cove Railroad.

On Monday, May 8, passenger and freight trains commenced running regularly on the Hollidaysburg & Morrison's Cove Railroad as far as McKee's Gap, seven and a half miles beyond Hollidaysburg. The work on the balance of the road is being pushed forward as rapidly as possible, and will be completed by September or October. This is an extension of a short branch of the Pennsylvania Railroad which joins it at Altoona.

The Pullman Cars.

Mr. Charles Nordhoff writes as follows to the New York *Evening Post:*

"The enterprise, which had a small beginning, with two cars and but little capital, is now successful. The Pullman Company are now running four hundred cars; have built forty new ones this year; are now completing seventy more, and have thirty more on the stocks. They run on almost all the railroads in the country, having made their arrangements with eighty-two different lines, which cover 45,000 miles of road. Most of the agreements with railroad companies are made for fifteen years, and the companies generally take stock of the Pullman Company to the amount of one-half the value of the sleeping cars they use. Thus their interest is mutual. I am told that many of the companies which had sleeping cars of their own have found it advantageous to make their arrangements with the Pullman Company; and certainly the public benefits by this, for travelers are not compelled to change from car to car, and may secure their sleeping and other accommodations when they buy their tickets.

"The Pullman Company now employs over 1,400 persons, and large shops are to be erected at Chicago this year, where 1,000 men will be constantly employed in the construction of these cars. On a single railroad, the Michigan Central, the Pullman Company has now $398,000 worth of cars. These the railroad company uses and keeps in repair. The Pullman Company furnishes their interior and keeps that in order, and the railroad company gives to the Pullman Company only the privilege of selling to the public what the railroad does not itself furnish, namely, sleeping accommodations.

"I am told that the dining-cars "pay," and that they will be gradually introduced on all the roads which use the Pullman cars. They are now in use on the Chicago & Alton, Chicago, Burlington & Quincy, Northwestern, Michigan Central, and some other roads, and meet with general favor, as they deserve."

Adirondack Railroad.

This is a road which is to extend from Saratoga northward across the wilderness of Northern New York to Ogdensburg. It is completed and in operation from Saratoga northward, for the most part in the valley of the Upper Hudson, 44 miles to a station known as The Glen. It will soon be opened to North River, 16 miles further. Thomas C. Durant, famous for his work on the Union Pacific Railroad, is at the head of the Adirondack. A New York paper says: "When Dr. Durant was attracted to the enterprise it had been nearly, if not wholly, abandoned, and the projectors had sold their franchises for a mere song. Dr. Durant, Judge Rosecranz, of the Supreme Court, and other capitalists purchased immense tracts of land along the intended route of the road. After the completion of the Pacific road he appears to have turned his attention to the completion of the Adirondack enterprise. Last winter a bill was passed by our State Legislature appropriating a considerable sum toward the work. Inasmuch as the bill was tacked on to several other bills, Governor Hoffman vetoed the whole of them. Durant was, however, not discouraged. He declared to a friend that he was determined to secure State aid, and should do it. A new bill, appropriating a million of dollars, was passed this winter, the measure going through the Senate during the closing hour. The Governor having failed to veto it within the legal time, it has become a law, and the work will now be pushed to completion. It will open up to communication with the outer world immense tracts of valuable timber lands which have hitherto been almost inaccessible, and will doubtless be followed by a considerable emigration in that direction."

A Georgia Consolidation.

The Savannah *Republican* of the 27th ult. gives the particulars of the consolidation of two of the most important lines of railroad in the State—the Central of Georgia and the Macon & Western. The Central Company takes the Macon Company's works, agreeing to operate them, "and on the score of dividends places its stockholders on the same footing with its own."

The Central was before the most important railroad corporation of the State. It owned the railroad from Savannah west by north to Macon, 192 miles, leased a branch to Augusta, 53 miles, and one through Milledgeville to Eatonton, 39 miles, and the lines of the Southwestern Company of Georgia, and one from Macon southward to Eufaula, Ala., 143 miles, with a branch from Fort Valley to Columbus, 71 miles, one from Southville to Albany, 23½ miles, and one from Cuthbert to Fort Gaines, 20 miles. This includes, altogether, 541½ miles of road. The Macon & Western extends from Macon northwestward to Atlanta, 102½ miles. It is the only road entering Savannah which has connections beyond Georgia.

Vera Cruz & Mexico.

This railroad is completed from Vera Cruz island as far as Potrero, and is to reach Cordova, about 60 miles, in July.

Baltimore & Ohio.

A telegram from Baltimore, dated June 3, says: "Fisher & Sons, bankers, of this city, to-day purchased from the proper State authorities between 5,000 and 5,500 shares of the common stock of the Baltimore & Ohio Railroad, being the entire interest of the State in the common stock of the road, at $140 per share. The sale was made under the act of the last session of the Legislature, to meet the indebtedness of the State on its bonds matured in January last. By this sale the State will lose two directors of the company, and the amount realized by the sale of common stock being insufficient to pay the bonds matured, a further sale of preferred stock owned by the State will probably be necessary, when the State will lose more directors of the company."

Leavenworth to Olathe.

Engineers report a short route between these two places, which will involve building about 20 miles of new road and form a more direct connection for Leavenworth with the Missouri River, Fort Scott & Gulf road.

The New Jersey Lease.

The stockholders of the New Jersey Railroad & Transportation Company, one of the three corporations forming the United Companies of New Jersey, on the 7th inst. voted by a large majority to ratify the action of the board in leasing to the Pennsylvania Railroad Company.

California Pacific, Eastern Extension.

This company, which proposes to construct, in connection with the California Pacific now in operation from Vallejo to Marysville, Cal., a new line to connect the Union Pacific with San Francisco Bay, filed its certificate of incorporation on the 22d ult. The incorporators are: Milton S. Latham, J. Friedland, W. F. Roelfsen, Colonel John B. Frisbie and Julius May, of San Francisco, and Rudolph Sulzbach, of Frankfort-on-the-Main. The company organized on the same day by the election of Wm. F. Roelfsen, President; Colonel J. P. Jackson, Vice-President; Milton S. Latham, Treasurer; Colonel W. H. L. Barnes, Secretary.

Atlantic & Pacific.

The office of J. T. Redmond, Assistant Superintendent of the Atlantic & Pacific Railroad, has been removed from Pacific to Springfield, Mo.

Pennsylvania & Sodus Bay.

Ground was broken at Seneca Falls on June 3 for this new 3-feet gauge railroad, which is to connect the coal fields of Pennsylvania with Lake Ontario at Sodus, a harbor about 30 miles west by south from Oswego.

Salisbury & Baltimore.

The contract for the graduation, ballasting, masonry and bridging of this railroad, running from Myer's Mills on the Pittsburgh & Connellsville, to Salisbury, in Somerset County, Pa., was, on the 24th ult., awarded to Messrs. John and Chas. Donahue, of Altoona, Pa., who have recently completed extensive contracts on the Pittsburgh & Connellsville Railroad. The road is 10½ miles in length, and runs through the coal fields said to have been discovered in that region.

Minneapolis & White Bear.

The first rail on the Minneapolis & White Bear Railroad was laid on the 31st ult. at its junction with the Lake Superior & Mississippi road, near White Bear Lake, Minn. The road-bed is nearly all graded, and, if there shall be no disappointment in the receipt of the iron, it is expected the road will be formally opened on the 4th of July. This road will give Minneapolis a direct connection with Duluth.

Lexington & Big Sandy.

It is reported that the Chesapeake & Ohio Company will obtain the means for the completion of the above road as a westward extension. This would make Louisville the true western terminus of the great Virginia Railroad.

Maysville & Lexington.

From the report of the Treasurer, Henry Pelham, Esq., it appears that the receipts from all sources since the commencement of the work have been $745,879.30, and the expenditures $601,900.79—leaving a balance of $143,978.60; to which add amounts to be paid by the counties and private subscription, estimated at $181,196—making a total of $325,174.60. The amount paid to contractors and on construction account has been: on the Paris Division, $140,867.42, and on the Maysville Division, $357,169.73; total, $508,037.15.

Middletown & Unionville.

There is a little branch railroad in Orange County, N. Y., extending from Middletown, — miles from New York, on the Erie Railway, south by west to Unionville, on the Jersey line. It has hitherto been operated on a temporary lease by the Erie Railway, and its chief traffic has been milk. Lately the New York & Oswego Midland made a contract for a permanent lease of the road, to form a part of its main line. Hereupon the Erie Company announced that it would cease operating the road immediately, and as the Midland will not be completed to New York for nearly a year, the milk farmers between Unionville and Middletown seem likely to be without a market.

Mr. George Crounch writes to the New York *Tribune*, inclosing a telegram sent to the President of the Unionville road, on the 24th ult., by Jay Gould, in which the latter says that Erie has run the Unionville road at a loss ever since its opening, hoping to regain the expenditures in the future, and should therefore have had the option of taking the road; he, however, permits trains for the accommodation of milkmen to be run ten days longer, without fixing any price for the service, that the stockholders may meet and make further arrangements.

International Railroad.

An officer of this company sends us a map of the route, which shows the line extending from Fulton, Ark., the terminus of the Cairo & Fulton Railroad, southwest across Texas to Laredo, on the Rio Grande River, and thence in the same general direction across Mexico to the port of San Blas, on the Pacific, just below the mouth of the Gulf of California and in the latitude of Cuba. It shows also a branch from the city of Monterey due south to the City of Mexico. The line in Texas passes through Tyler, Hearne (on the Texas Central), Austin and San Antonio, in Texas, the line in this State being very nearly parallel with the Gulf coast, and about 175 miles inland. The total length of the line in Texas is nearly 600 miles. The main line in Mexico is about 500 miles, and the branch about 400.

Our correspondent sends us also the following information concerning the road, which will give a short route to and through Texas, both to the East and the Northwest:

"We have now graded 65 miles. The trestling finished 40 miles.

"The American Bridge Company, of your city, have the Post combination bridges here for the first 75 miles, with the Little Brazos Bridge, 160 feet span, in position and finished.

"We have rails and material for superstructure for 60 miles on hand at Hearne, and have 60 miles of iron additional bought and afloat.

"We have at the present writing four Rogers engines running and eighty flat and box cars, and four more engines to be delivered before October 1, next, with two passenger coaches, two baggage cars and twenty box cars additional on the way from New York.

"We have 1,500 men at work on grading and masonry and will have 75 miles more road ready for iron by December 31, next.

"I may add that our contractors are now laying four thousand feet of iron daily."

The general offices of this company are at Hearne, Texas. The officers are J. Sanford Barnes, President; Paul N. Spofford, Secretary; Thomas W. Pearsall, Treasurer; H. M. Hoxie, General Superintendent; R. S. Hayes, Chief Engineer; J. A. Evans, Consulting Engineer. The company has also an office at No. 29 Broadway, New York.

The State of Texas has given $10,000 per mile in aid of this road. Its route from Fulton to Hearne, about 250 miles, is through a fine cotton and grain country; the remainder of the line from Hearne to Laredo, about 350 miles, is through the great stock-growing counties of Texas which are likely to afford it a handsome traffic from the first.

Southern Pennsylvania.

This railroad, a branch of the Cumberland Valley road and only a few miles long, is nearly completed to Mercersburg, Franklin County. The Cumberland Valley Company has a lease of it.

Decatur, Sullivan & Mattoon.

The Decatur (Ill.) *Republican* of the 1st says: "The contract for building the Decatur, Sullivan & Mattoon Railroad was, last week, let to Messrs. Tuttle, Matheny & Co., and work will be commenced immediately. Prior to the letting of the contract, the first four miles west of Mattoon had been graded. Mr. Tuttle informs us that the road will be completed from Mattoon to Sullivan by the 1st of September, and the entire line finished by Christmas.

Springfield & Illinois Southeastern.

An Evansville paper says that the contract has been let for the construction of the gap between Pana and Edgewood, 39 miles, to be completed by November, which will make the line complete from Shawneetown through Springfield to Beardstown, on the Illinois River. We had understood from the officers of the road that this section would not be contracted this year.

Plymouth, Kankakee & Pacific.

An exchange says that "The Executive Committee have closed a contract with Messrs. Hawkins, Willard & Co., of Chicago, for grading, bridging and tying fifty-five and one-half miles of the east end of their road, extending from Plymouth, Ind., to within ten miles of the Illinois State line. This ten miles General Cass, of Pittsburgh, Penn., has agreed to build, and will be on the ground this week to arrange for it. Work will be commenced at once, and will be pushed as fast as men and money can do it. Over seventy miles of this road is already graded, and much of the masonry done. A heavy force is at work on the west end, in Putnam and Bureau counties, Ill.

St. Louis & Southeastern.

A large force is at work on the extension of the Shawneetown from Equality northwest to McLeansboro, and 200 tons of iron have arrived at Shawneetown for the track.

Rio Janeiro & Pacific.

The New York *Tribune* says that Mr. Frederick A. Lane, one of the directors of the Erie Railway, leaves New York in a few days for Brazil, to superintend the survey of a railroad from Rio Janeiro *via* the Valley of the Amazon to the Pacific. An expedition has been formed. The first detachment is already *en route*, and the second is fast completing its equipment. Mr. Lane intends surveying the entire route, and will return by way of China and Japan, the trip to occupy about twelve months. It is stated that at the last meeting of the Erie Board, Mr. Lane submitted his resignation, which was accepted.

MECHANICS AND ENGINEERING.

Improved Street Cars.

It is reported that the Third Avenue Railroad Company will soon place upon their route several cars of entirely new design. The present management are dissatisfied with those now in use, and have determined to build experimental cars until a greatly improved pattern has been discovered.

Performance of a Locomotive.

Joseph West, a locomotive engineer on the Baltimore & Ohio Railroad, writes as follows to the *Locomotive Engineers' Journal:*

"I had the pleasure of running passenger engine, No. 233, for three years and one month; she was then placed on the Fourth Division of this road in charge of Mr. W. H. Johnson, who still continues to run her. Said engine was overhauled at these shops in the summer of 1867, by Wm. B. Edwards, M. M., and Alfred Bell, Foreman. On the first day of July, 1867, she was placed on the track for service, and has been running up to this present moment, and is still in fine condition. She is of Mason build, sixteen by twenty-four inch stroke, and five foot driver. The engine has averaged since the 1st day of July, 1867, up to the present date, 3,200 miles per month without the loss of a day—making in all 152,800 miles."

Proposed New System of Docks in New York.

The New York Dock Commissioners have issued the following statement of their plans:

"In arranging a new system for the accommodation of the shipping business of New York, the chief object has been to render it as simple and economical as practicable. The English system of tidal docks has been rejected as too expensive, and as inapplicable here; the variations of the tide being so small as to render such a system unnecessary, while our ample and secure anchorage grounds and extensive water front render it entirely practicable to furnish accommodation for any future commerce by a much more simple system.

The main features of the new system are—a wide river street, bounded by a permanent wall of masonry, and much more ample piers than the present. On the North River side the river street will be 250 feet in width, on the East River, 200 feet as far as Montgomery street, thence 150 feet wide to Grand street, thence 200 feet to Thirty-first street, thence 175 feet wide. This width will afford ample space for any future railway system as well as sufficient room to permit easy access to the piers, and uninterrupted transit along the river front. None of the new piers will be less than 60 feet wide, except in particular cases, where only one side of the pier can be used (as in those adjacent to ferry slips), others 80 feet, and others 100 feet wide. It is proposed to arrange to cover all piers that require it with a suitable one-story shed, affording the requisite facilities for handling freight. It is proposed to leave the erection of storehouses of several stories entirely to private enterprise, under the direction of the Board. The slips will be made of a width adequate to the purpose for which they are to be used. At the river wall there will be a depth of water of 20 feet, except where the absence of piers will permit large vessels to lie alongside, where the depth will be 25 feet or more.

"Into the construction of a limited number of the piers, stone and iron will enter, but the great majority will be of wood, built in the best manner. Considerations of the necessary economy lead to this conclusion, for the large wooden piers can be so made as to afford all the necessary facilities at a comparatively small outlay. The piers will all be on supports of such a nature as to allow free passage to the water.

"Under the present system there are, from Sixty-first street, N. R., to Fifty-first street, E. R., a wharf line of 150,293 feet, or 28½ miles, with a total pier area of 2,323,668 square feet. By wharf line is meant all that portion of the river wall and piers that vessels can approach. Considerable portions of this wharf line are practically useless from insufficient depth of water and other causes. Under the new system there will be a wharf line of 37 miles, and a pier area of about 5,105,000 square feet, from Sixty-first street, N. R., to Fifty-first street, E. R.

"It is proposed first, to complete the system from Grand street to West Eleventh street, within which limits there will be a wharf line of about 21½ miles, sufficient to accommodate the commerce of the city for some time to come, when the advantages of the new system are taken into consideration."

The Olmsted Electro-Magnetic Brake.

A trial of this brake was had on the Erie Railway last week, and, according to a New York paper, "it was "found to work well and possess all the advantages "claimed for it."

The Proper Limit, Curvature and Gauge of Narrow Gauges.

Mr. Richard B. Osborne, a Baltimore engineer, in a pamphlet on narrow-gauge railroads says:

"To talk of gauges of less dimensions than three feet, unless perhaps as exceptions for special or local purposes, to advocate them for ordinary freight and passenger traffic, I conceive to be running as far into extremes one way as our friends of the 7-foot gauge did in the other. So also in regard to curvature, in which we have reached as short a radius as is desirable on any road of whatever gauge. I differ from some of my engineering friends, who state that the advantage the narrow gauges will afford was in supplying facilities for the increase of this costly and most undesirable feature in our roads. On the contrary, I rejoice that it will afford us the means of keeping our roads more direct, and as near the perfection of the straight line as possible."

Breaking of the Winona Bridge.

The following account of the breaking of a pier of the new bridge over the Mississippi River at Winona under a train consisting of a locomotive and six flat cars loaded with stone, on the afternoon of the 27th ult., we extract from the Winona *Republican:*

"From Mr. Huxley (the engineer) we learn that at the time of the accident, the locomotive was within eight or ten feet of the middle pier. He was looking back at the bridge, and the first thing he saw was the timbers on the east side spreading out, and at the same time he felt the bridge sinking. One glance ahead showed that the track was clear, and opening the valve he let on a full head of steam. The engine bounded forward, snapping the coupling-pin that attached the tender, and reached the other side of the pier just in time to avoid crashing into the heap of ruins below. The cool heroism of Huxley in this trying moment can be commended with a good grace. Many men of less nerve would have jumped from their post and let the engine go.

"All who saw the bridge fall unite in saying that the break first took place near the middle pier, not far from where the locomotive was. The bottom and side timbers first appeared to give way, and then the whole span went down. Just what caused the accident no one can probably tell. The bridge had not been finally keyed up and adjusted, but it was believed to be perfectly safe."

RAILROAD LAW.

Relative Negligence—Case of Intoxication—Instructions in such cases.

The recent case of *The Illinois Central Railroad Co. vs. Hutchinson* (47 Ill., 408) involved chiefly the nature of instructions which a company may give in cases of relative negligence. There was much contrariety of evidence in the record, which the court sums up as follows:

This was an action brought by Elizabeth Hutchinson, administratrix of Alexander Hutchinson, deceased, in the Alexander Circuit Court, against the Illinois Central Railroad Company, to recover compensation for causing the death of her husband, under the act of February 12, 1853, by neglect, wrongful act or default of the company. The declaration avers that while the company were running their engine on the track along one of the public streets in the city of Cairo, when it was dark, deceased was run over, in crossing the track with due caution and care, in consequence of the neglect of the company to have a head light, to ring a bell or sound a whistle.

On the trial, the evidence tended to show that deceased had been drinking, but to what extent does not very distinctly appear. Two witnesses testified to his position at the time, or just before the accident occurred. One says he was sitting on the rail of the track, and the other on the end of a tie and leaning over the side of the track. There is a difference in the statements of witnesses as to the time of the day and the ability of persons to see and hear the train, but he could see and hear the bulk of a man 50 yards, and the engine 150. One says it was getting dark. Another says it was rather inclined to be dark. Another says they were just lighting the lamps on the street when the accident occurred. Witnesses differ as to whether the bell was ringing, but all agree there was no headlight on the engine, nor does it appear that the whistle was being sounded.

Upon these facts the defendant gave the following instruction, which was refused by the Court below:

We make this statement of the main facts of the case from a large amount of evidence, to show upon what appellants based their fifth instruction, which was refused by the court below, and the refusal of which is now, among other rulings of the court, assigned for error. It is this:

"If the jury believe, from the evidence, that the deceased, while intoxicated, placed himself, about dark, or in the dusk of the evening, on defendants' track running along a public street where defendants' trains were constantly passing and repassing, and so remained there until run over and killed by the passing engine of defendants, then deceased was guilty of such gross negligence that you should find the defendants not guilty; unless you further believe from the evidence that the agent or agents of defendants wilfully caused the death of deceased, or were guilty of such gross neglect on their part as amonnts in law to a wilful neglect of duty."

The court held that the instruction was correct, and remanded the case.

Taxing Ferries with Termini in different States—The St. Louis cases—The Wiggins Ferry Company not taxable in St. Louis.

In the Supreme Court of the United States, the celebrated cases of *The City of St. Louis vs. The Wiggins Ferry Company*, have recently been decided adversely to the city, the court holding that the corporation was not a citizen of Missouri. From the opinion we condense the following points:

The plaintiff in error instituted five suits in the St. Louis Court for the recovery of taxes alleged to be due from the ferry company to the city. Upon the petition of the company they were removed into the Circuit Court of the United States for that district. In that court, by the consent of the parties, the causes were consolidated and thereafter proceeded to trial as one case. The counsel upon both sides entered into a written stipulation waiving a jury, and the cause was submitted to the court, pursuant to the act of Congress of March 3, 1865. The court found the facts specially, and the finding is a part of the record. Judgment was given for the defendant. The city excepted, and has brought the case here for review.

The controversy relates to taxes imposed by the city upon the ferry-boats of the defendants, used in conveying freight and passengers across the Mississippi River between the city of St. Louis and the opposite Illinois shore. The company was required to pay a specific sum for a license, and a tax was imposed upon its wharf-boat, attached to the city landing. Both were duly paid. Payment of the taxes upon the ferry-boats was refused, and the several suits, consolidated into the one before us, were instituted by the city to recover the amount claimed to be due.

In the jurisprudence of the United States a corporation is regarded as in effect a citizen of the State which created it. It has no faculty to emigrate. It can exercise its franchises extra-territorially only so far as may be permitted by the policy or comity of other sovereignties. By the consent, express or implied, of the local government, it may transact there any business not *ultra vires*, and, "like a natural person, may have a "special or constructive residence, so as to be charged "with taxes and duties, or be subjected to a special ju- "risdiction."—*Glaize vs. S. C. R. R. Co.*, 1 Strobhart, 72; *Cromwell's executors vs. Charleston Ins. & Trust Co.*, 2 Richardson, 512.

Where there is jurisdiction neither as to person or property, the imposition of a tax would be *ultra vires* and void. If the legislature of a State should enact that the citizens or property of another State or country should be taxed in the same manner as the persons and property within its own limits and subject to its authority, or in any other manner whatsoever, such a law would be as much a nullity as if in conflict with the most explicit constitutional inhibition. Jurisdiction is as necessary to valid legislation as to valid judicial action.

Upon looking into the enactments under which the taxes in question were assessed, it is obvious that their purpose was not to tax the property, through the proprietor, but to tax the things themselves by reason of their being "within the city." The point for us to decide, therefore, is whether they are covered by the legal provisions under which the taxes were imposed. If the taxing officer acted without authority the taxes were invalid, and the city is not entitled to recover in this action.

The boats were enrolled at the city of St. Louis, but that throws no light on the subject of our inquiry. The act of 1789, Sec. 2, 1 Stat., 55, and the act of 1792, Sec. 3, 1 Stat., 287, requires every vessel to be registered in the district to which she belongs, and the 4th section of the former act, and the 3d section of the latter, declares that her home port shall be that at or near which her owner resides.

The solution of the question where her home port is, when it arises, depends wholly upon the locality of her owner's residence and not upon the place of her enrollment.—3 Kent's Com., 133, 170; *Hill vs. the Golden Gate*, Newberry, 308; S. B. Superior, Id., 181; *Jordan vs. Young*, 37 Maine, 27, 29.

The company had an office in Illinois. Its minor officers, such as engineers and pilots, lived in Illinois, where its real estate, including a warehouse, was situated. The company had also an office in St. Louis. Its President and Vice-President and other principal officers lived in the city, and there the ordinary business meetings of the directors were held, and the corporate seal was kept. The court found that the boats, when "not in actual use, were laid up by the Illinois shore, "and were forbidden, by a general ordinance of the city "of St. Louis, regulating ferries and ferryboats, to re- "main at the St. Louis wharf, or landing, longer than "ten minutes at a time." A tax was paid upon the boats in Illinois.

Their relation to the city was merely that of contact there as one of the termini of their transit across the river in the prosecution of their business. The time of such contact was limited by the city ordinance. Ten minutes was the maximum of the stay they were permitted to make at any one time.

The owner was, in the eye of the law, a citizen of that State, and, from the inherent law of its nature, could not emigrate or become a citizen elsewhere. As the boats were laid up on the Illinois shore when not in use, and the pilots and engineers who ran them lived there, that locality, under the circumstances, must be taken to be their home port. They did not so abide within the city as to become incorporated with, and form a part of, its personal property.—*Hay vs. Pacific Steamship Co.*, 17 How., 599; *City of New Albany vs. Meeken*, 3 Ind., 481.

Hence, they were beyond the jurisdiction of the authorities by which the taxes were assessed, and the validity of the taxes cannot be maintained.—*Railway Co. vs. Jackson*, 2 Wall., 262.

In our opinion, the facts found are sufficient to support the judgment.

Estrays.—The right of the taker up to recover for injury to estrays defined.

The facts in the recent case of *The Chicago & Northwestern Railroad Co. vs. Joseph Schulz* were as follows:

It appears from the evidence that appellee had, about eight months before the colt was injured, taken it up as an estray, and had attempted to post it as such under the law. That he had held it in his possession during that time. That the colt was running in a pasture adjoining appellant's railroad, and was only separated by a fence which the company were bound to keep in repair. That the colt got through the fence, and upon the road, and was so badly injured by a passing train in the night-time, that it became worthless, and was finally killed.

The Court arrived at the following conclusions:

As a general proposition subject to some exceptions, the person in peaceable possession of personal property may sue and recover for any wrongful damage it may sustain against any person but the true owner, and even against him if his possession is rightful coupled with an interest.

When a person had taken up an estray, and attempted in good faith to proceed according to law, although he omitted some of the requirements of the statute in regard to estrays, the animal being in his possession, *held*, that he might maintain an action in his own name for the killing of such animal.

That there is no rule of law which will authorize a wrong-doer to question the regularity of the proceedings in such a case.

That the taker-up of the colt not having complied with the statute in regard to estrays, would be liable to the owner for the animal.

Negligence.—Bad character as a plea in case of negligence.

The following most curious recent case is cited, not on account of its law points, but as a novelty in the somewhat barren field of railroad law. The case is recently reported from the Court of Exchequer in London, and is as follows:

"The plaintiff, a diamond merchant and dealer in jewelry, sued the defendants to recover damages for injuries he received through the negligence of the defendants' servants. The plaintiff was traveling from Scotland to London, and just after the train in which he was had passed Carlisle it came into collision with a train coming in the opposite direction. The plaintiff's carriage was smashed to pieces, and he was thrown on to the rails of the opposite line, with his feet under a wheel, upon which rested the fore wheels of an engine, and in this painful position he was pinned for upwards of three-quarters of an hour before he could be extricated from it. He was conveyed to an hotel at Carlisle, where he remained in bed for upwards of a month, and was attended by Dr. Day Goss, who came from London for that purpose, and by some local surgeons of eminence. The plaintiff complained that, irrespective of the loss he had met with by reason of the accident, he had lost a traveling bag with fittings, containing also a razor-case, in which he had stowed away £25. At the trial the plaintiff sat on a chair, with his legs supported by another. He stated that in his business of diamond merchant and traveling jeweler he realized an income averaging £600 a year, and that he was returning from a business tour when the accident happened to him. Upon cross-examination the plaintiff admitted that he had committed a most artful robbery. Sitting by the side of a lady in an omnibus, he abstracted her purse, and, taking four sovereigns from it, he left the purse on the seat. With this offense he was charged, and, admitting his guilt, was sentenced to six months' imprisonment. He admitted living with a woman who had been "wanted" for a diamond robbery, and being the companion of a man in Scotland who had since been tried and convicted of stealing diamonds. The jury said they were satisfied the plaintiff was a person of bad character. Witnesses were called on behalf of the plaintiff to prove that he was what he had represented himself to be—a diamond merchant and jeweler—and stated that they had seen him carrying on his business at the mart at Houndsditch. Upon cross-examination, one of the witnesses stated that the transactions at the mart which related to sales of diamonds and jewelry were all for ready money; that bought and sold notes were unknown; that no written records or entries existed of the transactions; and that, although the market was held on the Christian Sabbath, the dealings were not confined to persons of the Jewish persuasion. The medical evidence for the plaintiff went to show that, although the bones of his feet were not fractured, the muscles of them were greatly crushed and bruised, and that he could not, without great pain to himself, stand upon them. It was also stated that a disease of the bladder and kidneys he had suffered from had been greatly aggravated by this accident. The defendants admitted their negligence, but denied that the plaintiff was a *bona fide* dealer in precious stones and jewelry. They called medical evidence to show that the plaintiff could use his feet if he thought proper to do so, and that, although the use of one foot might be attended at first by some amount of pain, he could use the other with immunity from it. It was proposed to show that the plaintiff had been convicted under the vagrant act, but upon an objection being raised by Mr. Pollock, the evidence was rejected, as was also evidence to prove that the plaintiff, when an inmate of a prison, had been attended by the doctor of the establishment for bladder disease. The case was tried before the Lord Chief Baron, at Guildhall, and, in the course of summing up, his lordship told the jury that although the plaintiff was, upon his own confession, a person of bad character, they ought not to allow that fact to affect their judgment in considering the amount of damages the plaintiff was entitled to for the injury he had met with and the suffering he had endured by reason of the admitted negligence of the company; but upon the question of credibility, as to whether the plaintiff had told the truth as to the business he carried on, and the profits of it, the evidence of character was important, and ought to be considered. The jury in the end assessed the damages at £1,000. Mr. Digby Seymour, Q. C., moved for and obtained a rule on the ground of surprise, and that the damages were excessive.

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